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General Articles

COMMON AILMENTS OF THE FOAL FROM BIRTH TO WEANING*

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In the first place I should like to thank you for the honour you have done me in inviting me to come here to open a discussion on the common ailments of the foal, from birth to weaning, and in the second place I desire to congratulate you upon having chosen such an appropriate subject for the present meeting, now that we are just starting upon the foaling season of 1934. I hope that we may all learn something from each other, and so be able to meet and cope with its troubles more successfully than we have ever done before.

ANTE-NATAL OBSERVATIONS.—Is the mare in foal ? is one of the early questions likely to be encountered. The usual method of deciding this question of pregnancy is by means of a rectal examination, to ascertain if a foal can be felt in the uterus; if not, one may further confirm the matter by a vaginal exploration to discover whether the os uteri is patent or not.

Recently a new laboratory method has been discovered, and a sample of urine from the mare is submitted to the biological test for cornifying hormone. Members of the Profession can have this test carried out, for a fee of 5s., by the Equine Pregnancy Diagnosis Service, Institute of Animal Genetics, West Mains Road, Edinburgh.

MUMMIFIED TWIN FŒTUS.—During the latter part of the period of pregnancy one may be called to see, or have a report of, a mare whose udder has unexpectedly, and perhaps quite suddenly, flushed with milk, giving the owner the impression that she is about to slip her foal. However she may not do so, and the indications completely subside, but, when she is delivered of her foal at full term, and quite probably a living foal, one should be on the look out for a mummified twin fœtus if one is called upon to attend the mare either for delivery or removal of the after-birth.

DIETETICS OF THE DAM.—I do not think it is necessary to do more than point out that the diet should be laxative, so that the fæces may be soft and foaling easier and safer.

CLEANLINESS OF THE DAM.—In addition to general cleanliness, particular attention should be paid to the genitalia, udder, and tail.

THE FOALING BOX.—In the first place it should be safe (which term includes big enough), cleansed and disinfected, particular attention being directed to the floor, and if possible observable without entrance. One of the best I have noticed had a very large window, and at night the owner used to hang a lamp in the box so that he could get out of bed from time to time and look out and see the mare from his bedroom window.

OBSERVATION.—I think observation of the mare at foaling is essential, for in her case the early discovery of dystokia is most necessary, and even in case of eutokia, timely assistance may save the foal. A concrete instance may serve to drive home this point.

An owner had a blood mare that had always foaled to the day she was due. She was due on a Monday so he had no misgiving about going away on the Saturday, and did not give strict orders for her to be watched. When the men came up with the cows at milking time on Saturday evening they found the mare down in the box with her bowels and the foal's fore feet protruding from the vagina. She died, and of course the foal was lost as well, all because a slight deviation of the foal's head, which became jammed on the shaft of the ilium, was not discovered in time.

PARTURITION.—If everything is going well the mare should be left alone, at any rate until she has got the head and fore feet presented, when gentle assistance may save her a good deal of effort in the heaviest labour pains.

In the event of dystokia a sedative should be given at once, and the mare walked about to inhibit straining, and so prevent bad from becoming worse, pending the arrival of the veterinary surgeon upon the scene with all possible speed. Formerly dystokia almost inevitably meant the loss of the foal, if not the mare as well, but nowadays with telephones and motors, I think there are better prospects of delivering more living foals.

Although not strictly in accordance with the text, perhaps a word or two about dystokia may not be out of place, and those who have been at the game longest will appreciate how heavily a mare can strain, and have most foresight in avoiding a fracture or dislocated shoulders for themselves, and will also, I believe, most readily

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admit the value of anæsthesia or narcosis. Personally I prefer general anæsthesia, perhaps because I am chiefly concerned with Shire mares. If the mare is down one can slip the hobbles on and chloroform her in the recumbent position, but if not, chloroform her standing; if necessary, and conditions are favourable, taking her out of doors to do so. Having got her under, put someone to watch her respiration; and you may then happily discover that what seemed like being a difficult and heavy case has become a much easier one than you anticipated at your preliminary exploration.

Prior to delivery examine the bladder to make sure that it is not everted, and more important still, if eversion of the rectum is threatened purse suture the anus before proceeding with delivery, as this is a very fatal complication in the mare.

The *after-birth* should not be retained by the mare beyond six hours, and in all cases of sickness shortly after parturition it should, if possible be inspected to see that the end of neither horn has broken off, as such an accident is likely to set up septic metritis and parturient laminitis. If the mare has a live foal one should beware of administering drugs or pessaries likely to taint her milk.

The Foal at Birth.—The first thing to notice is that there is no excessive hæmorrhage at the navel—if there is, compress at once by the thumb and finger and ligature and disinfect. The newly born cannot afford to lose too much blood.

The second thing is to see the foal breathing. If necessary promptly resort to artificial respiration, apply a stimulant to the tongue and retract the organ.

With regard to the umbilicus, I believe that normal rupture is best, with no ligature at all, for Wharton's Jelly to escape.

Antiseptic treatment is best applied by perchloride lotion in an egg-cup, or by painting with tinct. iodi.—it is too moist for collodion.

Mismanagement.—This here consists in leaving four to twelve inches of umbilical cord, plastered with filth from the floor, full of blood clot, and ligaturing with binder twine.

Well! it is a great thing to be born alive, but it is a still greater thing to learn to live, and we must now get on with the second part of this major premiss.

Having got the foal on a nice clean dry bed, breathing regularly, and secure at the navel, the next thing is to get him dry and warm, but if possible, at any rate in a case of eutokia, try to get the mare to lick the foal whilst he is lying moist and newly-born upon the ground. If she does so she is much more likely to take to him kindly and *encourage* him to suckle.

This is very important, for if a mare learns to be a good mother, and particularly if she shows a tendency to produce progeny taking after the sire, she has a potential value which may often be far beyond her intrinsic value, assuming of course that she is free from hereditary unsoundness.

The next thing is to see about getting the foal up on his legs and suckling. If the foal is weakly born, especially if he is big, lanky, and sprawling, he may need some assistance. Indeed it may be necessary to give him some of the dam's milk with a spoon or little bottle, after milking her into a warm jug.

The udder of the dam should be sponged or washed clean before suckling the foal, and in doing so one may glean valuable information as to whether she will stand quietly for the foal to suck, and perhaps save him from a bad kick, particularly in the case of a primipara.

In some cases it may be necessary to drug a nervy, irritable, or vicious mare to get her to suckle her foal, and for such a purpose I prefer chloral hydrate (ʒi to ii). Even in sucking one may be misled, especially in the case of the big lanky foal that will not learn to get his head down to the job. Here the attendant may be deceived by the foal suckling *at* the udder or base of the teat, and in such a case if he gets anything into his stomach at all it will be wind, and that will very soon spell trouble. If you want to find out whether a foal is getting nourishment examine the mare's udder.

The next thing in chronological order is to see about the outlet of the "grand canal," for things cannot go well with the intestines until the meconium is eliminated.

The "old time" method of attending to this problem was by means of a tallow candle, and no doubt it went as far as a tallow candle could be expected to go. The modern method is by means of a copious enema of warm soapy water and, if need be, some olive oil and a spot of ol. tereb. emulsified in it. A rubber colon tube attached to the nozzle of a Higginson's enema syringe is an advantage.

In cases of death from "meconium poisoning" or "auto-intoxication," on *post-mortem* examination one may find the large bowel impacted for a length of four to six feet.

The symptoms are debility, decubitus, coldness of the mouth and extremities, and later coma.

Treatment.—Give a dose of ʒi to ʒii ol. ric. and chlorodyne, adding a dose of brandy if a stimulant is indicated, together with frequent and copious enemata. Sometimes one may have to use a vulsellum or the bitch whelping forceps to extract excessively large and hard pellets of meconium.

The quicker the foal can be got to suck well, and have the colostrum into him, the sooner he will get rid of the meconium, and when one sees the fæces change from black-brown pellets to a yellow-ochre paste, and from that to a yellow pultaceous consistency, one may regard the new arrival as being round the "Cape of Good Hope."

Just one or two practical points about the mare's udder and the milk:—

(1) Œdema or "Honing" of the Udder.—For this trouble one should have recourse to frequent fomentations and massage, and it may be necessary to milk the mare and feed the foal, as sometimes the teat may be almost obliterated.

(2) Mastitis.—Treat and milk out the affected side, and clean it, before the foal sucks the other. Probably he will very soon learn to leave the bad side alone.

If the foal is not thriving one of the first points calling for investigation is the *quality*, as well as the quantity of the mare's milk.

I do not consider it wise to rely solely upon macroscopical and physical characters, but much prefer to bring home a sample in a clean bottle and take it straight to the creamery for analysis, and thus be *quickly* furnished with a report of the composition of the milk. One may get some surprising results. I have known the fat content to be returned as low as ·02 per cent., and this was confirmed a few days later by Professor Linton, to whom I also forwarded a portion of the sample.

In a case of such deficiency no time should be lost in supplementing the foal's ration with cream. In the event of having to resort to bovine milk for a foal one should bear in mind the importance of its being tubercle-free, therefore from a heifer or tested cow.

If the weather is favourable do not delay in getting them out of doors, as there is nothing like plenty of sunshine for the foal and plenty of grass for the mare.

Diseases and Accidents

It has nowadays become a very common practice—at any rate amongst Shire horse breeders—to insure against foaling risks, and as a first general consideration one should know, and constantly bear in mind, the conditions and provisions of such policies.

In many cases one may find that the foal is covered for a period of 30 days only, whilst other policies may extend for a longer period, with increasing valuation in the event of loss. It is usual for the Company to demand prompt advice of the act of foaling, and in the event of accident or illness during the currency of the policy they also need to be informed. In the event of loss a veterinary certificate is required, and this is usually sent out by the Company as part of, or accompanying, the claim form.

In dealing with foals and foaling cases it is therefore advisable to make a note of the sex, colour, and markings of the foal, and also of the dam.

Having already dealt with the immediate fore and aft problems of the alimentary canal, the next region at which it behoves one to be on the look out for trouble is at the navel.

Pervious Urachus is the first of these likely to come under notice.

It is probably commoner, and certainly more troublesome to treat, in colt than in filly foals. Cleanliness is the primary essential and for this purpose one should shave or clip off the hair from around the navel, having the foal down on his side on clean bedding, and the hind legs securely held. (Do not attempt single-handed to lift a foal more than two or three weeks old). Cleanse with alcohol (S.V.M.) and cotton wool, and then cauterise the urachus with pure phenol (liquid), pushing it up with a camel-hair brush or some cotton wool on an applicator. Afterwards dress with an antiseptic powder containing salicylic acid, iodoform, and starch. Do not ligature.

Navel-Ill.—This may supervene soon after birth, but there is also a danger of infection later, when the withered cord sloughs off, leaving a raw surface. The younger they get it the worse the outlook, but the more circumscribed the suppuration the more favourable the prognosis.

Put the foal down, cleanse the navel, and with a bistoury or scissors open it up freely, backwards and forwards; disinfect and cauterise (phenol or strong solution of hg. perchlor. in alcohol). It is essential to ensure free drainage.

Serum and vaccine treatment may be of some avail in developing antibodies to counteract further and deeper invasion, and thus ward off a generalised infection, with the synovial fringes of the joints as a predilection seat for its manifestation.

Frequent urination is a common symptom in all foals suffering from navel-ill (Udall).

Joint Evil (Polyarthritis).—This is generally a sequel of navel-ill, but not necessarily so. It is usually immediate, but sometimes deferred. The more immediate the worse the outlook. Prenatal infection is believed in by some observers. Four organisms are incriminated by bacteriologists in the etiology of this disease, *viz.*—(from Udall's "Practice of Veterinary Medicine," 1933): (1) Streptococci; (2) ***Bact. viscosum equi*** (***Bact. nephriditis equi.***); (3) ***B. coli;*** (4) ***B. abortivo-equinus.***

Infection due to *Bacterium viscosum equi* "is characterised by sudden onset, extreme prostration, short duration, after appearance of symp-

toms, and death." The umbilicus and navel vessels are not usually involved. The most distinctive changes are in the *kidneys*—the glomeruli are enlarged, with necrosis and abscess formation.

The temperature is high, 103 to 105°F., the breathing is fast, and the infection attacks during the first few hours after birth.

In *streptococcic infection* there is a much longer period of incubation. The disease commonly appears after the foal is 10 to 14 days old, and the fatal cases die after a course of two to three weeks. Usually there is an inflammation of the umbilicus, with abscess formation that extends to the umbilical veins or to the urachus, and often involves the peritoneum. Abscesses may be found in the spleen, liver or lungs. Often the first symptom to appear is swelling of one of the joints, particularly the stifle or hock. This may be followed by weakness and gradual loss of condition, until the foal dies of exhaustion.

In *colon infection* the symptoms are those of an acute septicæmia, sometimes in association with inflammation of the joints and umbilicus. The mortality is high.

The variety of organisms involved in the etiology of navel-ill and joint-evil may be some explanation why serum and vaccine therapy has not attained high and universal recognition as a specific method of treatment. The use of antistreptococcic serum and other biologics is reported by M'Fadyean as ineffective. Udall states that subcutaneous injection of the dam's blood into the foal in all cases has gained considerable reputation; this is given in doses of 100 to 200 c.c. and increasing amounts are administered if the foal becomes sick.

With the foal less inclined to suck, and more and more prone to lie down, one needs to be on the look out for signs of stiffness or lameness, and swelling of one or more of the joints, especially the hock or the stifle. When the joint becomes hot, swollen, and painful, the contents may be examined, with antiseptic precautions, by means of a stout hypodermic needle. If purulent, inject the joint cavity, after evacuation of the contents, with glycerine, with which phenol or hg. biniod. may be combined. Potass. iodide and liq. arsenicalis may with advantage be given internally.

The prognosis should in all cases be very guarded, for the more I see of joint-ill, the less do I feel inclined to promise a complete recovery.

Extension of infection, especially if associated with suppuration beneath the deep fascia, is a very unfavourable indication. If the foal is in great pain, with persistent decubitus, it were best destroyed on humane grounds.

Mismanagement.—Failure to observe pervious urachus or navel-ill in time; or, if noticed, wasting time with inappropriate treatment.

Pneumonia may be "caught" as the result of a chill, or "given" by unskilful or careless drenching, and either way is more likely to be met with in early-born foals. If called in early a smart, but not too severe, sinapism is beneficial. If the foal is sucking give some quinine, or other febrifuge, to the mare in her food; admittedly the foal will get but a homœopathic dose in the dam's milk, but that will probably be much safer than drenching. If the indications are such as to suggest that the foal "must" have medicine, some syrup of glucose, given with a teaspoon on the tongue, is one of the safest bases for medicaments. Above all, see that the foal is warmly and suitably clothed, with due precautions against galling if tender skinned, and that adequate ventilation is constantly available. Bed on clean wheat straw rather than on peat-moss or sawdust.

Diarrhœa.—To begin at the tail end, where of course the trouble is first noticed, the parts should be cleansed, dried, and protected with vaseline, or other demulcent, to protect the skin from "scalding," and suitable clothing and a clean, dry, bed provided.

Examine the mare's udder to ascertain if there is any change in the milk, and if necessary have it analysed. If the foal has not been sucking the mare should be milked out, as "pressure milk" has not the same analysis as normal milk: this of course applies in other diseases as well.

A foal will often scour when the dam comes in season, and such attacks are the easiest to cure. Another cause is the foal starting to eat food with the mare too soon (earlier than four to six weeks). Such cases usually present a furred tongue and fœtid odour of the mouth, and the foal may eat the mare's dung, or lick the walls, indicating hyper-acidity of the stomach. Bismuth, chalk, and opium are the time-honoured remedies, administered in starch or arrowroot gruel. Bismuth subsalicylate is a newer and very useful preparation, also pulbit. If the case is seen early and the foal not too weak, a preliminary dose of castor oil is strongly indicated to clear the bowels. White of egg and port wine may be given, or albumen water, or water in which rice has been boiled.

Mismanagement.—In addition to general negligence one may find that the owner has been "too good" to his foal. Quite recently I have come across a case where the foal had been drenched with half-a-dozen eggs, beaten up, the previous day and a like number the same morning. Viewed from behind it suggested a "futuristic" picture in yellow, whilst there was such a mingling of the odours of indole, skatole, and H_2S, that it literally stunk like a skunk.

Colic.—This is very often spasmodic and

yields to prompt treatment with castor oil, sedatives, and enemata. Be on the look out for a hernia that may have become strangulated, especially in a colt foal. Hot packs may prove useful in cases of severe and acute pain.

Hernia: *Umbilical and Scrotal.*—Both are best left alone till weaning so long as they do not become strangulated, and it is a good plan to instruct the owner to replace the intestine daily to prevent adhesions. Some bland application for gentle massage whilst the intestine is up may help and does no harm. A truss may be useful for umbilical hernia, but such an appliance is not feasible for the scrotal variety. If strangulation should occur prompt measures are essential. Cast, chloroform, dorsalise and effect reduction whilst the muscles are relaxed. The radical operation for umbilical hernia should be performed at weaning time. Colts that have had bad scrotal hernia as foals should be castrated by means of the " covered " operation.

Wounds.—These generally heal well and leave much less scar than one would anticipate, except those involving cartilage, particularly the ears, and especially if contused. In summer it is wise to keep the mare and foal in a loose-box during the day time, to prevent irritation and infection by flies.

Tetanus.—Most commonly the sequel of docking. Re-dock and sear well. Give a dose of serum and hope for the best, especially if the foal can suck and swallow properly. If milk gets down the trachea into the lungs septic pneumonia may ensue.

Deformities.—Usually affect the limbs and if not too gross can often be helped with orthopædic or surgical shoeing, *e.g.*, prong shoes for contracted tendons.

Worms.—As we approach the time of weaning the graver becomes the danger of parasitic infestation. As a sound general prophylactic measure " horse sick " pastures and stagnant watering places should be avoided. The worst offender is the *Sclerostomum tetracanthum*, closely followed by the *Strongylus armatus*. (Old names).

With regard to treatment, I think that " catch them young and treat them gently " should be the motto, though I am well aware that there are some who advocate the stomach tube and associated drastic measures, and look upon *ol. chenopodii* as a specific remedy. Good feeding and hygienic environment are factors that play an important part in promoting recovery, with a course of tonics and bitters as an adjuvant.

Now my time is up, my foal is weaned, and I trust that my remarks have recalled interesting cases to the minds of all, which I hope we may hear of presently.

. . . . .

Discussion

The following contributions, by Mr. E. H. Curbishley, in opening the discussion, was read in his absence:

Before proceeding to a consideration of the diseases of foals, I beg to suggest that it might be worth while to remember the adage " prevention is better than cure," and with that in mind to try and find out whether the correct method of giving the best possible start in life to a new born foal is thoroughly understood by the " laity " and whether the steps in correct procedure could be so tabulated as to meet with the acceptance, approval, and adoption of all veterinary surgeons who are concerned with horse breeding.

The need for this was made apparent recently when one of the first Shire studsmen of the day, Mr. James Forshaw, addressed a farmers' meeting at Bolton (as reported in *The Stockbreeder*) upon the care of young foals and his own methods of setting them going.

How should we instruct breeders about, say—

1. Getting a foal to its feet?—the lay attendants being usually more hysterical than the dam!
2. Should the cord be tied or not?
3. Should it be dressed, and if so with what agent and how often? Is it possible to retard quick drying off and healing by too much or dirty handling?
4. Is it necessary to insist on the youngster sucking before it can stand alone, or before the veterinary surgeon leaves the premises? I believe I have seen a good many foals " mauled to their death " by too anxious owners!
5. What conditions necessitate the keeping of foals " in the house " and until what age or date ought they to stay in?
6. Natural functions must be established: what means are best and safest to adopt? Should emunctories be used as a matter of routine, or only in case of need, when perhaps it may be too late?
7. Whether by death of dam or from some other cause of loss of milk there are always a few foals to be hand reared. What is the best procedure and food when a foster mother is not available? Some do fairly well and others are lost. Why cannot we have equinised milk, as medical men have humanised? Many valuable animals might be saved by it and owners would pay such a price as to make its production worth while. Showmen would use it, too, and cow's milk, unless tuberculin tested, might not be safe for foals.
8. Congenital weakness, inanition, inability to stand or to suck and all the conditions about which a veterinary surgeon would be consulted will be dealt with by the speakers at this meeting. I do not forget Brayley Reynolds' pronouncement on cardiac injury of the new born, but so many " hairy legged " foals present the above symptoms that it seems as if they might not all be due to the same cause—is it possible that delayed operation of endocrine functions may be involved and that a " microscopic " dose or two of balanced endocrine substances might give such weaklings a push in the right direction?

Mr. F. G. Edwards expressed his pleasure at being present to hear Mr. Hughes' excellent paper. Although the subject had been covered very thoroughly one or two conditions had not been mentioned and one was spasm of the uterus in

the mare. It was not an uncommon condition, but if the animal developed periodical attacks it became frightened.

He cited a case of a foal which had been born at 5 a.m. At mid-day it was attempting to climb walls, lying on the floor galloping, and boring its head against the wall. About 4 p.m. on the same day it was given a dose of chloroform and destroyed. A *post-mortem* examination revealed nothing, with the exception of cerebral congestion causing some intracranial pressure. The birth was a normal one and it was difficult to say why and how this condition arose.

Another condition which might be referred to was twisted bowels in foals six or seven months old, in which one found large numbers of round-worms (ascarides) and one wondered how much those parasites were the cause.

Another condition met with was apparent dislocation or displacement of the small intestine—the foal was found in acute abdominal pain, frequently lying on its back. On *post-mortem* examination, when opening the abdomen the inflamed small intestine protruded instead of the large colon. In those cases there was no twist.

With regard to umbilical hernia, he thought traction on the cord at birth was the main cause of the trouble.

Referring to the removal of the placenta, Mr. Edwards thought it was wise to put it on the ground and see that it was all there. It could be filled with water. In mares that had foaled before time, say about the sixth month, the placenta could apparently remain in the animal even for a week without causing much trouble.

In answer to a question by Mr. Hughes, Mr. Edwards said he had not had a case of a calcified placenta.

Mr. H. H. Aldred gave details of a mare which developed laminitis in the hind feet after foaling. Poultices were applied for one day and night, and the next day the hoofs came away.

With regard to the rearing of foals, he thought a lot of damage was done by over-anxiety of the owner and in many cases the animal was better if left alone. A foal was a very delicate and tender animal, and could be damaged a good deal by too much handling.

Another point which had occurred to him was with regard to docking foals and the injuries sometimes caused by the application of a twitch. He did not know the best method of securing a foal, but a good plan was to get a man at each side of the animal each holding the other's hands. The animal could then be held without being knocked about too much. Another cause of injuries was trying to get the foals to suck when too young and there again the question of too much handling arose.

Mr. Aldred said he had had a few instances of injuries to the ears and had found dry dressings to be the best form of treatment.

Mr. H. Sumner, Junr., expressed his pleasure at hearing Mr. Hughes' remarks. The matter had been fully surveyed, and he would like to say, as a general practitioner, how refreshing it was after a good deal of controversy about whole-time *versus* part-time veterinary surgeons, etc., that they had returned to an equine subject, especially taking into consideration the fact that the subject had been started before the foal was born. He hoped that the Council and the "powers that be" would not forget that the horse still remained an important factor in veterinary practice and merited more consideration from an Association such as the Lancashire than had been given in the past.

He could not criticise such a full paper by an acknowledged authority, but there were several points which had arisen in the review of the subject to which he would like to refer. In the first place, the one point of paramount importance was the necessity for speed and early attention to all cases as soon as possible. A simple case at 9 a.m. became a matter of some difficulty and possible loss at 11 a.m. He noted that Mr. Hughes appeared to be quite satisfied with chloroform as a general anæsthetic and a valuable aid, and Mr. Sumner wondered whether he had had any experience with the use of chloral given intravenously. He had a case in which, injecting 2 drams of chloral hydrate intravenously, he had carried out his task under pleasant conditions. Anæsthesia lasted about two hours after he had finished. In response to a question by Mr. Hughes with regard to the quantity of the dose, Mr. Sumner replied that about 100 c.c. of water with 2 drams of chloral hydrate given intravenously had effected complete anæsthesia.

Mr. Hughes had rightly stressed the importance of the examination of the placenta, and Mr. Sumner agreed that it was essential that the tip of the placenta be found and recognised, and that if not intact, a uterine examination be made in order to find the missing piece if possible.

He was not quite clear whether Mr. Hughes was a whole-hearted supporter of the "school" who thought ligature of the navel was the end and everything of attention at birth. Personally, he did not agree. Except in the case of extreme hæmorrhage, he thought the cord was best left alone with particular attention to cleanliness.

With reference to previous urachus, had Mr. foal on its feet, when all was said and done the animal had had a strenuous time during its short period on earth and it might not be quite ready to get up when wanted. He thought that often more harm was done by man-handling in getting it on its feet, with the addition of trying to get the colt to suck. He was not clear that it was the proper procedure, and was inclined to the view that a waiting policy within reasonable limits was preferable.

Mr. Sumner went on to refer to constipation and the inadvisability of giving copious enemata of soapy water. He had seen all too frequently not only a rupture of the rectum but also of the floating colon because of the too free use of cheap soap and water. He thought olive oil or liquid paraffin safe and just as effective. With reference to the condition of the udder, Mr. Hughes had advised just before or during parturition, massage and hot fomentations. He (Mr. Sumner) preferred massage with a simple bland oil rather than hot fomentations. More harm than good was done with hot fomentations, especially taking into consideration the danger from subsequent chills. Mr. Curbishley in his contribution to the discussion (the speaker was sorry he was not present) had raised an important point with regard to the rearing of the orphan foal, either by means of the bottle or a foster-mother. It was always disappointing to lose the mare, and it only added to one's troubles by losing the foal also, especially if due to dietetic matters.

With reference to pervious urachus, had Mr. Hughes dealt with any cases where surgical methods had had to be adopted?

Regarding joint-ill, he noticed that Mr. Hughes had dismissed the use of biologics. He wondered whether he had attempted or had any success with the serum treatment before birth. Mr. Sumner cited a case where there had always been trouble with joint-ill, and the previous year the

whole question of dietetics had been under review at the premises. One thing that had been altered was the addition of a mineral agent to the diet: not a single foal was lost through joint-ill and the mares had both bred foals. He wondered if Mr. Hughes had had a similar experience which might suggest that the mineral factor might have had something to do with the trouble, or was the successful foaling season in this stud due to purely fortuitous circumstances?

Concerning bowel disorders, pulbit had been used successfully in Mr. Sumner's cases, and he had hoped they could have obtained more information in the matter of foals which were lost through twist of the bowels. He did not refer to those cases mentioned by Mr. Edwards but to those where one experienced a really good twist in a foal: the condition was inexplicable and was difficult to deal with, and he had hoped that Mr. Hughes would have referred to these cases. Mr. Sumner stated that he had a case of umbilical hernia which he had had under observation for some time. There was an aperture of at least 9 inches across, and he had not much confidence in tackling the animal with the method adopted by Mr. Hughes.

He was pleased to hear Mr. Hughes question the drastic measures that some veterinary surgeons employed in dealing with Strongylosis in foals. Mr. Sumner said that he was clear in his own mind that the worm question was a serious one, but one was more likely to do good by a middle course of controlling worm infestation than of aiming at the ideal, that was, complete eradication. He thought Mr. Hughes was as clear on that point as he himself was.

He expressed his gratitude to Mr. Hughes for his exposition of his subject.

Mr. A. J. Wright referred to anæsthesia of the dam in cases of dystokia and asked whether Mr. Hughes had had experience of the injection of parsetic or chlorocaine into the spine. Did he advise flushing and syringing out the uterus in cases of retained fœtal membranes? Mr. Wright said that in many cases he could not reach to the far end of the cornua of the uterus and portions of the placenta had been left with no ill effects. He had been called in to cleanse a mare that very day which had foaled 28 hours previously and which, nevertheless, was quite fit and normal.

With regard to vaccination of the dam as a preventative against joint-ill in the foal, Mr. Wright had had success with Genatosan's "Tregor." One mare had for three years given birth to foals all of which were affected with joint-ill. This year the dam was injected previous to parturition, and the foal also, directly it was born, and so far the foal was clear from joint-ill.

With regard to the artificial feeding of foals, how often a day should a foal be fed? Another troublesome condition met with in foals was prolapse of the rectum. How did Mr. Hughes treat these cases?

In cases of colic pains in the foal, he used a drink recommended by his predecessor which consisted of chlorodyne, spirits of camphor and ether, and had given it with great success.

Mr. Wright cited the case of a "freak foal" he had attended. The foal, a colt foal, born to time, appeared to be quite normal and healthy for nearly 48 hours after birth, when it was taken with colic pains, and died within a few hours. On making a *post-mortem* examination he was surprised to find a quantity of urine in the abdominal cavity. On closer examination female genital organs were found, *i.e.*, uterus and ovaries, with another urethra leading from the bladder towards the pelvis, where it opened: urine could escape freely into the abdominal cavity. On questioning the owner, the only abnormality he had noted during the first 48 hours after birth was that the urine seemed to be dribbling away from the penis.

The remarkable thing about this case was the fact that urine had free access to the abdominal cavity and yet no illness was observed for 48 hours.

Mr. C. F. Shawcross referred to artificial respiration and asked what form was recommended by Mr. Hughes. He cited a case which he had attended recently where a mare had twin foals. The first foal was dead and the second did not breathe but some muscular movement was apparent. With his assistant he started a rocking movement and it was kept up for over half an hour, when the heart was still beating but breathing had not commenced. As the owner appeared to be quite indifferent and did not offer to assist, the treatment was discontinued. He thought that if they had continued, the animal might have been saved.

In the treatment of the umbilicus he usually gave a mixture of formaldehyde and iodine. The dressing was placed in an egg-cup, the umbilicus put into it, and the treatment continued for about a week. He had adopted this treatment with much success. He thought that if the navel was treated properly at birth there were not many cases of navel-ill. If it was not properly treated, infection might quickly become general through the open umbilicus.

With regard to evacuating the rectum, he thought that supplying the clients with human glycerine suppositories was a good method and, in his opinion, they were better than soapy water injections. In a case he had attended recently, the foal showed symptoms of pain and he had used liquid paraffin enemata but could not get movement of the bowels. He there and then made an instrument with a piece of wire which he folded double, bending the double end in the form of a hook. This he passed into the rectum and when he had got some of the larger lumps away a good evacuation was effected.

In the treatment of pervious urachus a solution of formaldehyde, 1 to 2 c.c., was injected into the umbilicus and had proved very successful.

Mr. Curbishley had asked how long it was advisable to house a foal after birth and Mr. Shawcross expressed the opinion that if the weather was good the more the foal was allowed to stay in the open and not come into the box, the better. It was not then so liable to navel infection or joint-ill. It was better for a mare to foal in the field if the weather was suitable.

With regard to artificial feeding, he thought that diluted cow's milk, three parts milk, one of water, with the addition of a level tablespoonful of sugar, and a tablespoonful of lime water to the quart, was the best mixture for foal rearing.

Mr. A. B. Kerr said he had little to add to the discussion but he desired to say that as a whole-time veterinary officer he had appreciated and enjoyed listening to the paper presented by Mr. Hughes.

There were only two minor points he wished to raise, the first being with regard to pervious urachus. He noted that Mr. Hughes advised against ligaturing, whereas he (Mr. Kerr), thought it was essential at times.

Another condition which might be termed subacute tetanus was quite prevalent in some parts

of the country. The foal displayed all the symptoms of tetanus but the condition did not develop and the effects disappeared after a week or two.

The Reply

Mr. Hughes, in reply, expressed his pleasure that he had been the means of stimulating a good discussion. He was pleased that Mr. Edwards had raised the subject of spasm of the uterus in thoroughbred mares. He noted that Mr. Edwards was of the opinion that in the case of umbilical hernia, the condition was set up by traction on the umbilical cord. That might be so in some instances, but he thought it was due to the fact that the closure of the abdominal wall at the umbilicus was not complete and that with the pressure exerted upon the abdominal contents by the foal being expelled through the pelvic girdle of the mare, and the pressure being often increased by traction upon the limbs, one got the viscera pressed and pushed through the weakest point of the abdominal wall.

Mr. Aldred and Mr. Edwards had touched upon the question of twist in foals. He had not had so much experience of twist in the bowels as they seemed to have had, and whether it was a matter of local conditions or not, he was not prepared to say. He had not met with many cases of twist in foals whilst they were on a milk diet and in this connection he would like to take up an interesting point raised by Mr. Edwards with regard to opening the abdominal cavity of the foal and wondering where the colon was. Mr. Hughes said he thought the colon developed very much after the foal was born and after it went on to a vegetable diet.

He was pleased that Mr. Aldred had responded to his invitation for particulars concerning injuries to the ears, and noted that he had found dry dressing to be the best treatment.

Referring to Mr. Sumner's remarks, Mr. Hughes said he could endorse all that had been said about speed. It was essential. If an owner would only advise the veterinary surgeon early of any trouble, it was to their mutual benefit. One always obtained the best results if one was prepared, and called in the early stages.

With regard to the dose of chloral given intravenously by Mr. Sumner, he was amazed at the effects.

In connection with ligature of the navel, if the the cord was unbroken and still attached to the placenta in the mare, it was advisable to put on a double ligature and cut between it, but as a rule it was ruptured as the foal went through the genital canal of the mare, and if it was not too long it was best left alone. It was advisable to apply a dressing that would dessicate it as soon as possible.

Referring to the question of enemata in clearing up meconium, he thought that glycerine set up heavy straining and he suggested that olive oil or liquid paraffin was the better treatment. Soap and water, he found, had the advantage not only of acting as an enema, but when the finger was inserted one found the meconium pasted to the wall of the rectum, and the soapy water acted as a detergent and lubricating agent. The appliance made out of bale wire, as described by Mr. Shawcross, was quite a useful idea if one had not a more appropriate instrument in one's bag. Mr. Hughes went on to say that he had forceps that would undo at the joint and had a spoon-shaped blade. They pressed the meconium on to the finger. It was a handy instrument. An enema could be given by gravity and there was less risk of getting too great a pressure on the viscus. It was undesirable to push a quart or two of liquid into a foal by pressure. When some of the larger lumps had been removed, one could often get a copious evacuation. Another point was that the skin of a mare's udder was thin and it was not advisable to use water that was very hot, and of course it should afterwards be dried and massaged.

He agreed with the remarks about the orphan foal. In artificial feeding the cow's milk should be diluted and the fat content reduced from 3½ to 1½. Lime water should be added so as to prevent a curd from forming in the stomach.

He was interested in the vaccination of the mare before foaling with either serum or vaccine, and he had noted Mr. Sumner's remarks with regard to the addition of a mineral to the diet. Last year was a very good year for rearing foals, for there was more sunshine than in previous years, and it must have been of great benefit for foals.

In reply to Mr. Wright, Mr. Hughes said he had not tried spinal anæsthesia with parcaine.

With regard to the douching of the uterus, he was in favour of it so long as one syphoned afterwards and emptied the womb. In cases of difficulty in removing the placenta it was often of assistance to introduce a rather larger and warmer douche than one would ordinarily do.

Concerning the twin foals referred to by Mr. Shawcross, it was probably better that the foal did not recover. The first thing to do in artificial respiration was to blow down the foal's nose and mouth. The carbon dioxide exhaled in the breath seemed to act as a stimulant.

He was interested in the remarks about the separation of the coronary band.

With reference to the housing of the foal, most of the speakers seemed to think that it should be put in the field as early as possible. That could not be done with early-born foals, but probably it was desirable to put them in the open as soon as possible in suitable weather.

Mr. Kerr had referred to the need for ligatures in cases of pervious urachus and Mr. Hughes said he was of the opinion that one should cauterise first and ligature afterwards if required.

With regard to Mr. Lees May's remarks about the saline and formalin douche, it acted in two ways; firstly as a strong disinfectant to the mucous membrane, and secondly as a stimulus to promote the contraction of the involuntary muscle fibres of the uterus.

ANCESTORS OF THE ELEPHANT

"Excavations undertaken by Archdeacon Owen on the site of the discovery two years ago of mastodon fossils on Madboko Island, a mile from the northern shore of Kavirondo Gulf, have led to further discoveries which, it is believed, may fill the gap between the Miocene trilophodon and the palaeomastodon," says the Nairobi Correspondent of *The Times*.

"The discoveries include parts of a skull, well-preserved ivory tusks, and teeth. The teeth show ridge numbers intermediate between the paleomastodon and the trilophodon, suggesting that they belong to the Upper Oligocene strata. Archdeacon Owen believes that the specimens, which are from three beds, represent five different species of trilophodon, comprising an evolutionary series and so helping to throw new light on the ancestors of the elephant."

PROLONGED LACTATION PERIODS (II)

R. G. LINTON, Ph.D., M.R.C.V.S., Department of Hygiene, Royal (Dick) Veterinary College, Edinburgh

In 1929 the writer placed on record* an account of the prolonged lactations of four cows, together with the analysis of their milks. These cows had been milking continuously for two years, eleven months; four years; twelve years; and for 15 years, without the occurrence of pregnancy during the periods.

To this list may now be added the record of a cow which has been milking continuously for six years and eight months. She is a Shorthorn (" Bobby "), rather of the beef than dairy type, and at present is fat, weighing approximately 13 cwts. She was bought at Preston auction mart on May 24th, 1927, and it was stated she had calved four days previously. When purchased she had had three or four calves, so that she is now either twelve or thirteen years old. She is milked at 7 a.m. and at 5.30 p.m., and at the time her milk was sampled for the purpose of making this record (April 11th, 1934), she was giving 10 lbs. of milk in the morning and 8 lbs. in the evening. At the beginning of the lactation the daily yield of milk was between 50 and 60 lbs. When considering the performance of this animal it is of particular interest to note that throughout the whole of the period, six years and eight months, she has never been outside the byre and has not received any grass, roots, or cod-liver oil. During the past four years a constant supply of water has been available to the cows in the shed.

* Prolonged Lactation Periods—I. *Veterinary Record.* 9. 31. pp. 651-652.

The method of feeding practised with this herd is that whereby all the cows are given a diet in excess of that required for milk production, the object being to have the animals fat at the time they are nearly dry; with this particular cow the daily ration had lately been slightly reduced. The ration is as follows:—

	lbs.
Hay, Italian Rye Grass and Clover	16
Wet Brewers' Grains	22
Linseed Cake	5·6
Maize Meal	5·6
Dairy Nuts	1·4
Treacle	2·25

As is customary with Lancashire dairymen, the owner of this cow usually purchases good quality hay from the South of England, it being fully realised that high-grade hay plays an important part in ensuring a good milk yield and the maintenance of health.

In order to determine the quantities of protein, calcium and phosphorus in the daily ration, samples of the hay and dairy nuts were obtained and analysed with the following results, calculated to dry matter basis:—

Composition of Hay and Compound Cake. (dry matter basis.)

	Crude Protein.	Total Ash.	Silica-free Ash.	CaO.	P_2O_5.
Dairy Nuts	21·95	9·54	7·26	1·27	2·36
Hay ...	10·30	6·91	5·87	1·48	0·47

Assuming the compound cake to have a starch equivalent of approximately 64 per 100 lbs. and the hay 31, the diet would be in excess of the standard requirements for milk production, as is shown in the following table:—

Composition of Daily Diet Compared with Standard Requirements.

	lbs.	Protein lbs.	Starch Equivalent lbs.	Dry Matter lbs.	Calcium (Ca) gm.	Phosphorus (P) gm.
Hay	16	1·48	4·96	13·76	69·43	13·51
Brewers grains	22	1·16	4·18	7·04	7·14	17·48
Linseed cake	5·6	1·37	4·03	4·99	9·08	20·06
Maize Meal	5·6	0·38	4·59	4·87	1·95	7·15
Dairy nuts	1·4	0·28	0·90	1·20	5·19	5·96
Treacle	2·25	0·02	1·17	1·67	2·27	0·20
		4·69	19·83	33·53	95·06	64·36
Standard Requirements:						
Maintenance	—	0·86	7·6	—	48·7	15
Milk, 18 lbs.	—	1·08	4·5	—	15·7	12·6
Total requirements	—	1·94	12·1	—	64·4	27·6
Quantities in diet	—	4·69	19·83	—	95·06	64·36
Excess in diet	—	2·75	7·73	—	30·66	36·76

It is therefore clear that the diet supplies a superabundance of nutriment. The estimated excess of 30 gm. of calcium and 36 gm. of phosphorus is based on the assumption of a utilisation by the animal of 60 per cent. of the calcium and phosphorus ingested. It is improbable, however, that assimilation would be so high in a stall-tied cow on a diet lacking in green food. Nevertheless, the health of the animal has been maintained.

Representative samples of the morning and evening milks from the cow were obtained on April 11th, 1934, and were found to have the following percentage composition:—

Composition of the Milk.

	Total Solids.	Protein.	Fat.	Lactose.	Ash.	CaO.	Cl.	P_2O_5	MgO.
Morning (7 a.m.) 10 lbs.	12·33	3·68	3·45	4·39	0·81	0·16	0·14	0·24	0·026
Evening (5 p.m.) 8 lbs.	12·86	3·81	3·90	4·34	0·81	0·16	0·14	0·24	0·026

It will be noted that the ash content is higher than that present in normal milk, as was found to be the case in other instances of prolonged lactation; of the mineral constituents determined, the chlorine and the magnesium show the most pronounced increase, while the calcium is the same as that found in normal milk.

The mean composition of the morning and evening milks from this cow is given in the following table together with the earlier records:

I am indebted to Mr. E. B. Stevenson, Assistant Agricultural Adviser, British Oil and Cake Mills, Ltd., for having drawn my attention to this interesting case. To Mr. R. McMillan, of the same firm, I am particularly grateful for the trouble he has taken in obtaining samples of the milk and the food, and for supplying me with the information which has made it possible to place on record the performance of this remarkable animal. The cow is the property of Mrs. Littlefair, Bootle, Liverpool, who kindly gave facilities for this enquiry to be held. The analytical work for this communication was carried out by my Assistant, Mr. A. N. Wilson, B.Sc., A.I.C.

Record of Prolonged Lactations.

Cow.	Age.	Time since Calving.	Daily yield in lbs.	Percentage Composition.								
				Protein.	Fat.	Lactose.	Ash.	Solids.	Cl.	CaO.	MgO.	P_2O_5.
Normal	—	—	—	3·39	3·68	4·94	0·72	12·73	0·09	0·15	0·014	0·225
Cross-bred Friesian 1929	9 yrs.	2 yrs. 11 mths.	20·6	4·04	3·16	5·10	0·76	13·06	0·09	0·149	0·036	0·224
Ayrshire ... 1929	9 yrs.	4 yrs.	9	3·63	4·20	4·61	0·72	13·16	—	—	—	—
"Daphne" 1929	23 yrs.	12 yrs.	4 to 5	5·30	6·50	4·02	0·82	16·64	0·08	0·188	—	—
"Old Jersey" 1929	at least 20 yrs.	15 yrs.	18	3·99	4·37	5·09	0·83	14·28	0·07	0·147	0·027	0·247
Simmenthal (Orla Jensen) ... 1925	?	19 mths.	13·6	4·45	6·10	4·39	0·79	15·84	—	—	—	—
Simmenthal (Orla Jensen)	—	26 mths.	?	3·71	6·40	4·77	0·80	16·09	—	—	—	—
Simmenthal (Orla Jensen)	—	29 mths.	9·1	3·41	6·46	4·38	0·84	16·46	—	—	—	—
Normandy (Monvoisin) 1925	1st calf	1 yr.	11·28	4·30	4·49	4·70	0·68	14·42	—	—	—	—
Normandy (Monvoisin) ...	—	2 yrs.	9·6	—	—	—	—	—	—	—	—	—
Normandy (Monvoisin) ...	—	3 yrs.	6·8	—	—	—	—	—	—	—	—	—
"Bobby" 1934	12-13 yrs.	6 yrs. 8 mths.	18	3·74	3·67	4·36	0·81	12·59	0·14	0·16	0·026	0·24

Clinical Articles

EMACIATION IN CATTLE*

W. T. HEWETSON, M.R.C.V.S.
Brampton, Carlisle

I cannot hope to give you a comprehensive discourse on all the causes of emaciation in cattle, but, if you will allow me, I will put before you what was to me a very interesting case, since it presented so much difficulty in diagnosis.

In the Spring of last year I was consulted by a farmer about a number of his cattle. He informed me that during the last two years he had lost over sixty cattle from the same complaint, in which the animals slowly pined away. Many suggestions as to the cause had been offered: Johne's disease, fluke, worms, etc., and for each, appropriate treatment had been prescribed; still the animals continued to die, none recovered. Twenty-two cattle were affected now, all losing flesh. The farmer himself thought that some infection had been contracted from drinking sewage water, as all the sick cattle had been grazing in fields through which sewage water passed. In one field, from an adjoining farm, all surface sewage passed *via* an open gutter. The sewage from the village, after passing through two filter beds, was carried halfway down one side of a field and there discharged into a beck. The cattle preferred drinking the water containing the sewage rather than the purer water above the effluent. The course of the disease in all the cattle affected had been the same. The cattle grazed in those two fields in summer did not thrive, so that when winter came they were in poor condition. When housed they had poor appetites, and in spite of enticing food in abundance, they did not improve, and gradually declined. To date, every single animal which had the complaint has died, in spite of good feeding and every form of treatment prescribed. On visiting the farm I found 22 cattle ill: 15 cows, some carrying their second calf; some having calved their second calf; and one cow which had calved her third calf; also seven stirks from sixteen to eighteen months old.

SYMPTOMS

There was a great similarity of symptoms in all the cattle. The animal was emaciated, tucked up in the flanks and hide-bound. The hair, in most cases, was unduly licked, as if there was some irritation of the skin, and from time to time there was grinding of the teeth. On careful observation it was noted that there was an occasional drip of saliva from the mouth, this being more pronounced at some times than at others. Throughout the treatment the animal often gave itself a peculiar shake. The animal did not chew its cud. The temperature was normal in most of the cattle; in a few 103 degrees, and in two it was as high as 105 degrees. The fæces were abnormal, being semi-fluid in consistence and, when newly passed, offensive. At times the animal was purged. The fæces were passed in small quantities, were of a pale colour, and often contained bubbles of gas mixed with mucus. The pulse was regular, though rather weak, but not fast. In one, the oldest cow, which had calved her third calf, the pulse was very peculiar: it was fairly strong, hard, of a jerky character, not quite regular, yet not intermittent. I considered this cow the worst case, though the pulse was the only symptom different from those exhibited by the other cattle. The appetite of all the cattle was poor and irregular. Though various foods were offered, none of the animals could be tempted to eat a maintenance diet. They had no cough, no disturbance of respiration, no enlarged glands, no abnormal thirst. The symptoms clearly pointed to some gastro-intestinal upset. What was the cause of this? The following occurred to me: flukes, worms, Johne's disease, tuberculosis, sewage water.

It was impossible to give a definite diagnosis on the spot, so I proceeded to eliminate some of the causes. Nine of the most likely cows were tested ophthalmically with concentrated tuberculin, and all passed the test. There was no cough, nor were there any abnormal lung sounds on auscultation, or any palpable glands. On this evidence, tuberculosis was put aside. As for fluke and worms, both of these had been suggested as the cause of the disease in the two previous years, and treatment had been given for both, without any good results. Nevertheless, all the cattle were given two doses of extract of filix mas. All the young cattle had also a weekly dose of copper sulphate solution and nicotine sulphate for three weeks. Worms are rare in matured cattle, though they are often the cause of emaciation in young animals.

It seemed to me unlikely that this was an epidemic of Johne's disease, having only met with that disease in single cases. Nor had I seen it in stirks. The possibility of some infection from the sewage water could not altogether be eliminated, but seldom, if ever, has it been possible to prove definitely that water containing sewage has been the cause of upset and ill-health in cattle. The sewage was from an adjoining farmyard, and on enquiry, I found that this farm also had had animals similarly affected, all of which had died. On another farm lower down, through which the beck ran after receiving the filtered sewage from the village, cattle also had died of the same complaint. On the face of it, this circumstantial

* Paper presented to the Dumfries and Galloway Division, N.V.M.A., at Carlisle, February 27th, 1934.

evidence suggested very strongly that the sewage water was the cause of the ailment in the cattle, but in my opinion, none of the above, *viz.*, flukes, worms, or sewage water, was the cause of the complaint.

In my district, for some time, there has been a complaint of quite a distinct entity, about which I have written in *The Veterinary Journal*, and which I called "grass ill in cattle," as it is almost identical in symptoms with, and can be cured on similar lines as, "grass ill" in horses. Cattle with this disease present symptoms almost identical to those of the present case, though, previously, I have seldom had more than three ill on the same farm at one time. Some farms are peculiarly prone to this "grass ill," which, in my opinion, is due to partial paralysis of the bowels, a condition which is brought about by exposure to extreme cold, when the animal is "out of its hair." Farms exposed to the east wind from the Pennines are liable to have animals affected. The particular fields where these cattle grazed were very much exposed to the east winds. I examined the fields carefully, but could not discover any particular or unusual herbs or shrubs that might account for the disease. One field had been an old pasture, ploughed and laid down to grass a few years ago; the other was a meadow.

TREATMENT

In view of this tentative diagnosis of "grass ill," all the cattle were put on soft diet, consisting of scalded bran, linseed meal or calf meal; water "with the chill off" was offered to them twice a day, but they did not drink freely, probably because they were feeding only on soft food. No astringents whatever were given, though the cattle were scoured. On the other hand, each animal received three pounds of treacle, half an ounce of gentian pulv., one ounce of mustard and one drachm of nux. vom. pulv. daily. This was continued for several weeks. No bedding was allowed. All grass, hay, straw and dry food were withheld. With this treatment, the cattle, with one exception, gradually improved. They were brighter, more lively, and those cows that were milking gave more milk. There was still intermittent diarrhœa, with periods when the dung was of normal consistence, and of a darker colour. Eventually each animal passed one or two motions which were thicker, mixed with mucus and of a putty-like consistence and tenacity, and had a very foul smell. After this the dung remained normal in consistence, and the animal rapidly improved. All the bad symptoms, such as grinding of the teeth, dripping of saliva, mucus in the dung, had disappeared.

Up to this time the affected animal had received no food except the bran and treacle. A few of the cattle were considered cured in three weeks, most of them in six or seven weeks, and one was fifteen weeks before receiving any dry or solid food. Every animal passed through the same stages of progress, from intermittent diarrhœa, then the dry putty-like dung, then on to the normal fæces.

When considered cured, they were allowed a handful of hay, this quantity being increased daily unless the animal showed adverse symptoms. It was not until this time that they began to chew the cud. They were put out to grass, and allowed out at the beginning for a few hours only, the day being fine, and housed during the night.

About this time, when most of the cattle were cured, the oldest cow, which I considered the worst case, died. On *post-mortem* examination, there was no evidence of previous fluke infestation. The mucosa of the abomasum, small intestines, and cæcum was congested, and œdematous. Portions of these organs were sent for pathological examination to the Royal Veterinary College, London, and the report returned was that the condition was Johne's disease, with a recommendation that all the remaining animals should be tested with johnin. Fifteen cattle were tested—fourteen cows and one stirk—by Mr. Reed, Assistant Veterinary Officer for Cumberland, and all passed the test.

In the Autumn I was asked to go and see two bullocks at this particular farm, with the same complaint. I found one unable to rise and the other was scouring profusely, showing all the symptoms of the previous cattle treated in the Spring. The owner had dosed these two with fluke and worm medicine, but had allowed them to remain out on grass. As the animal that could not rise was in a dying condition, it was slaughtered and a *post-mortem* examination made. There was no evidence of worms macroscopically or microscopically. The liver was healthy, showing no evidence of fluke. The mucosa of the fourth stomach and gut was not congested. The only stomach that was found to be abnormal was the omasum. In some parts of this the ingesta was moist, but between most of the laminæ the ingesta was exceedingly dry, and could be lifted out, like dry ginger snaps. This was the only *post-mortem* examination, except that of the cow with Johne's disease, I had the opportunity of making, but I am convinced that the other cattle, now cured, would have shown similar pathological findings, and that the reason this animal was not cured was because it had not received the requisite dietetic treatment. The living bullock was now housed, treated like all the others, and it, too, made a good recovery. It may be considered that the animal that was slaughtered was suffering simply from the effects of a stoppage. This was certainly true, but it was a stoppage of a particular type. It had specific symptoms and it

required specific treatment to bring about recovery. With the one exception all the cattle made a complete recovery. All put on flesh rapidly, and are to-day splendid animals. Two of the cows, when newly calved, were sold at Penrith Auction Mart, and gained first and second prize respectively.

I am quite satisfied that these cattle were suffering from a partial paralysis of the guf and this is only cured by treating it systematically. The gut, in such a condition, could not deal with dry food, not even grass. The indications are to rest the gut, yet gently stimulate it. Moist bran, linseed, etc., are easily digested, and laxative, and give bulk for the gut to contract on. Treacle is mildly laxative and in glucose supplies the necessary nutriment. Of the drugs prescribed, strychnine and mustard are to give tone to the gut, and gentian, a bitter, to stimulate the appetite. Above all, let me stress the importance of continuing this dietetic treatment for several weeks, even months, if necessary.

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EXCEPTIONAL LENGTH OF GESTATION IN A MARE

J. R. BAXTER, M.R.C.V.S.
Lechlade, Glos.

A few weeks ago I was asked, by the owner, to look at a pedigree Percheron mare. This mare had already carried a foal over 50 weeks and was apparently normal in every way. She eventually foaled on the 371st day—without help—and both mare and foal have since done well.

I see Fleming states that births "are not rare from 350 to 365 days, but they are indeed so after the latter period."

WHALE EXTINCTION THREATENED

The warning of an expert, Mr. J. T. Jenkins, who in his "History of Whale Fisheries," says: "Unless steps are taken forthwith to afford protection for whales their extinction will be complete in from five to ten years' time," is supported by Mr. E. R. Darnley, until lately chairman of the Discovery Research Committee, and stressed further in a recent issue of *The Evening Standard* by Mr. Wentworth Day. In the course of an article, otherwise mainly descriptive, Mr. Dale says: "In the Antarctic alone there were 43,000 factories of the type I have described, six land stations, 232 whale chasers, and ten transport vessels, manned in all by 11,000 Norwegians. Neither age, sex, pregnant mothers, nor suckling calves are spared in this ruthless slaughter. Yet the whale only breeds about once in two years. The female is pregnant for 360 days. The baby blue whale, when born, is between 25 and 27 feet long, and weighs about fifteen tons. Twins amount to only 0·7 per cent. of the average birth-rate.

"It will be seen, therefore, that under no possible circumstances can a natural increase of whales be expected to balance this appalling and devastating rate of slaughter."

Annotation

CATTLE DISEASES AND THE DISEASES IN MAN ASSOCIATED WITH THEM*

(*a*) Cattle Diseases.

(i) *Bovine tuberculosis.*—The generally accepted conclusion that at least 40 per cent. of cows in dairy herds are infected with tuberculosis does not appear exaggerated. This is supported by the following facts: first, the results of tuberculin tests in 144 herds which had not previously been tested for tuberculosis showed that 2,233, or 43 per cent. of 5,199 cows gave a "positive" reaction; and second, that 39·5 per cent. of 55,318 cows slaughtered at various centres were found on *post-mortem* to be infected. Figures from Edinburgh suggest that of these infected animals about 70 per cent. are only slightly infected; they are nevertheless of potential danger. Unfortunately reaction to the tuberculin test does not show what is the stage of the infection, or whether the disease is progressive or quiescent. Even at an early stage of the disease, cattle excrete tubercle bacilli in great numbers. Generally speaking, tuberculosis does not appear in the udder until the disease has reached an advanced stage. The bacilli may remain alive for a considerable time outside the body and so contaminated premises or pastures are real sources of danger. The incidence of tuberculosis is normally low in heifers and calves, but rises rapidly after the second year; calves born from infected mothers are nearly always free from the disease and are likely to remain so if segregated at once. At present there is no adequate method of immunisation against this disease, and as no cure is known, infected herds are likely to remain infected unless steps are taken to eradicate the disease. The eradication of the disease from cattle would considerably diminish that in swine, horses, goats and cats. Whilst some herds are free from tuberculosis others are 100 per cent. infected.

(ii) *Contagious abortion.*—The opinion is generally held, but upon inadequate statistical data, that about 40 per cent. of the cattle of this country are infected with contagious abortion. The disease is responsible for serious loss to farmers both directly by causing the loss of calves and of milk, and indirectly by causing sterility. Farmers may choose one of two policies in combating this disease. Their herds

* An annotation on section II of the Report of the Cattle Diseases Committee of the Economic Advisory Council.

may either be carefully preserved from infection, but have to run the risk of a sudden and serious outbreak if infection be subsequently introduced, or they may be vaccinated with a preparation containing live organisms of moderate virulence, as dead organisms or organisms of greatly attenuated virulence appear to be useless or of little service. Vaccination should only be adopted in herds already heavily infected. Vaccinated animals may yield infected milk and they may be a source of danger to unimmunised cattle. Vaccination is useful if a policy of total eradication by segregation is impracticable.

(iii) *Johne's disease.*—The incidence of this disease appears to be variable with the locality; it is rare in Scotland. The disease may be latent in an animal for a considerable time before symptoms appear clinically. None of the small laboratory animals are susceptible to Johne's disease. There is as yet no diagnostic agent that can be used to indicate an infected animal with certainty. No cure for Johne's disease is known.

(iv) *Mastitis.*—Mastitis is a disease brought about by the infection of the udder with any of a number of organisms. It is probable that 30 per cent. of the milking cattle of the country is affected; of 1,613 cows examined at the Royal Veterinary College, London, 660 cows (or 40·9 per cent.) gave samples of milk showing definite infection of the udder, usually of a latent character. Mastitis may be caused by the tubercle bacillus, by streptococci, by staphylococci or by *Bact. pyogenes.*

The chronic form of streptococcal mastitis accounts for over 90 per cent. of the cases among milking cows. It results in the slow deterioration of the udder of the animal affected, and of the quantity and quality of the milk. The more acute form of streptococcal mastitis is less common, but is, nevertheless, a cause of severe loss for it attacks younger cows and results in an immediate reduction of the milk yield. Chronic infection is said to be spread by the hands of the milkers or by the cups of the milking machines. The method of spread of the acute form is uncertain. Infection with staphylococci is associated with a gangrenous form of mastitis which usually ends fatally.

Infection with *Bact. pyogenes* is responsible for "summer mastitis," a severe suppurative form which is prone to attack dry cows and virgin heifers in summer months. Infection is said to be spread by flies. Outbreaks of acute infection are generally dealt with by segregation of the infected members of the herd and by the use of vaccines. The latter treatment is of uncertain efficacy. Many cases of mastitis cannot be diagnosed by clinical means but are revealed only by laboratory tests of the milk.

(*b*) Diseases of Man associated with Cattle Diseases

"Milk may be dangerous to public health either because it is infected when yielded by the cow or because it is contaminated subsequently. The diseases of dairy cattle dangerous to man are tuberculosis, contagious abortion, and certain forms of mastitis, the latter causing certain epidemic diseases associated with streptococcal infection, such as septic sore throat." Milk originally pure may become infected either with tubercle bacilli originating from dust or dung and gaining access to the milk at the time of milking, or with throat, intestinal or exanthematous diseases derived either from the milker or from anyone engaged in the subsequent handling of the milk. Finally, milk is often infected in the home itself, the serious milk-borne disease, infantile diarrhœa, being due to infection there.

It is calculated that bovine tuberculosis is responsible for over 2,500 deaths annually among the human population in Great Britain. Practically every case is due to alimentary infection. Recent observations suggest, however, that persons who come much into contact with tuberculous cattle may contract bovine tuberculosis through inhalation of infective dust. Cheese, owing to the chemical changes which normally take place in its manufacture, is not likely to harbour infection. Dried milk is generally non-infective owing to the heat to which it is submitted, but butter, cream, cream-cheese and ice-cream, if made from raw milk, are capable of conveying infection. It is, however, to infection from milk, the food of childhood, that most of the bovine tuberculosis in human beings is attributable.

It is estimated that at least five cows in a thousand yield tuberculous milk. A large percentage, varying from 5 to 10 per cent., of mixed herd milks is infected owing to the mixing of the tuberculous milk with non-tuberculous milks in the herd. For a similar reason the percentage of samples of infected bulked milks is even higher. The bulking of milk, though doubtless making the milk less dangerous to those who are endowed with some degree of resistance, must increase—by spreading and keeping up the risk—the probability that tuberculosis will be contracted by those who are naturally, or become temporarily (as the result of weakness or other illness), susceptible to infection with the tubercle bacillus. The bovine bacillus is at least as virulent for man as the human bacillus, and is capable of producing all forms of tuberculosis. Hence the suggestion that a few bovine bacilli may be permitted in milk on account of their immunising value, cannot be accepted. The evidence that sub-clinical infections afford permanent protection against tuberculosis is quite inadequate;

the risk of spreading the disease outweighs any hypothetical advantage.

Undulant fever. It is believed that milk is the principal source of undulant fever infection in man in this country. Cows infected with contagious abortion pass infected milk in a large proportion of cases, though perhaps intermittently. Herd samples of milk are more frequently infected with *Brucella abortus* than with tubercle bacilli, yet undulant fever is very rare in man. In 1928 there were five and in 1932, 57 recorded cases in England and Wales. In concluding that "it is doubtful whether any measures that are practicable would appreciably reduce the present incidence of undulant fever in man, and still more, whether, from the point of view of public health, the effort used in such an attempt could not more profitably be expended in other directions," the report fails to realise that the comparatively simple step of enforced pasteurisation would eradicate the source of infection and would yield to public health authorities the certain elimination of a disease from humans with a minimum of effort.

Milk-borne epidemics. Approximately 100 outbreaks of common diseases, due to milk, have been recorded since 1903, with possibly many others unrecorded. In 1929 an outbreak in Hove affected 1,000 families and 65 deaths occurred. The diseases recorded as spread by milk include scarlet fever, enteric fever, diphtheria, paratyphoid and septic sore throat. As an illustration of the dangers of inefficient pasteurisation may be quoted the outbreak of typhoid in Montreal in 1927 when over 500 persons died as the result of infection introduced into milk by a typhoid carrier working in a pasteurising plant. Nevertheless, in spite of occasional serious outbreaks those reported are neither so numerous nor so severe as to contribute much to the total incidence of the diseases in question. Figures from the United States, however, support the contention that the number of actual outbreaks is much greater than those recorded. Owing to the rapid growth in milk of the organisms responsible for these diseases it is fortunate that the larger proportion of bulked milk is heat-treated.

Milk in human diet. The composition of various milks is discussed. It is concluded that there is a marvellous adaptation of the lacteal secretion to the needs of the developing organism, and that the milk secreted by a female of any species is peculiarly fitted for the maintenance, and perhaps even more particularly the rate of growth, of the young in the same species. The only drawbacks milk would appear to possess to the claim of being the perfect food for infants is that it is somewhat deficient in substances necessary for the formation of blood.

The effect of pasteurisation on the constituents of milk. In appraising evidence concerning the nutritional value of milk pasteurised, *i.e.*, heated to a temperature of 145° to 150° F. for half an hour, it is necessary to remember that any faults which may be attributed to it are exaggerated when the processing is carelessly conducted. The fat and sugar of milk suffer no appreciable change during treatment, whilst any effect of pasteurisation on the digestibility of the milk proteins may be dismissed as wholly unimportant for practical issues. There is some evidence suggesting that the availability of the calcium and phosphorus of pasteurised is less than that of raw milk but it is concluded that although this evidence "must not be ignored, there is to-day no direct evidence to show, if natural deficiencies in the original milk are first excluded, that it (pasteurisation) is responsible for the incidence of rickets in a form to be recognised clinically." Pure vitamin D is resistant to heat treatment, but experiments on animals have suggested that some degree at least of destruction occurs in milk when it is heated. Vitamin C is undoubtedly destroyed to a greater or less degree, during the process of pasteurisation, but the destruction is less in the absence of air. However "an unprejudiced survey of the evidence available to-day will leave on most minds, a conviction that any recognisable changes of quality induced in milk by pasteurisation rightly conducted, are as a whole too small to outweigh the great advantage inherent in the protection from infection which the treatment secures and in the public confidence which it inspires. It is sometimes suggested that there may be subtle changes not revealed in the state of present knowledge. Policy cannot justifiably be influenced by vague possibilities which established evidence makes improbable." The bottle-fed child should be protected from possible deficiencies of vitamins C and D, but it is admitted that such protection is almost as necessary in the case of raw milk, with its variable vitamin content, as in that of pasteurised milk. Any policy leading to an increase in pasteurisation of supplies should be accompanied by increased educational efforts to make the custom of supplying fruit juice to milk-fed children more general. During the winter small amounts of cod-liver oil should be given to infants reared on cow's milk.

Experiments have shown that milk brought quickly to the boil in a covered vessel and immediately cooled undergoes but slight changes. Milk when repeatedly submitted to heat treatment of any kind undergoes progressive deterioration as a food.

W. R. W.

Speaking in the House of Commons recently, Mr. George Lambert said: "I want my hon. friends to understand that if you have a cow reacting to the tuberculin test, if you are honest, you do not sell it."

Abstracts

[Navel-ill of Foals. Baker, D. D. *N. Am. Vetn.* *15.* 5. pp. 19-21.]

A communication concerning the use of sera and transfusion of the blood of the dam in treatment and prophylaxis. The quick response to transfusion or hypodermic injections of dam's blood, experienced consistently over a period of six years in the treatment of navel-ill, leads the author to regard this as a great advance on the local and medicinal measures formerly practised, which, while enabling the majority of colts to survive, inevitably "demanded a long siege of attention and expense."

At the start there seemed no set plan for dosage known, therefore subcutaneous injections of only 80 to 120 c.c.s of blood were made and in nearly every case that amount seemed to suffice. The larger dose (250 c.c.) later recommended by authorities, however, and to be repeated in two days, increased the danger of abscess formation at the sites of injection, and it was to overcome this that the intravenous route was adopted.

The author details the technique employed, and passes to a consideration of the use of dam's blood, in association with that of bacterins, in the immunisation of colts within the first few days after foaling. This has survived the severe test of successful application to a large number of foals from mares with the unenviable reputation of throwing colts "that always develop navel-ill."

W. B.

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[The Diagnosis by Radiology of Luxation and Torsion of the Coxo-femoral Joint in the Dog. (Trans. title.) Piat. (1934.) *Recueil de Méd. Vét. de l'Ecole d'Alfort, 110. 3.* 134-140.]

The following two rules were found to apply as distinguishing these two conditions, which of recent years have reached considerable proportions in the dog:—

The "space-line" between the head of femur and acetabulum is deformed, thin or absent = luxation of femur up and over the acetabulum.

The "space-line" between the head of femur and acetabulum is widened and crescent-shaped = sprain of the coxo-femoral joint.

As for all rules, these may have exceptions, but the author has never encountered them.

The author points out the present-day necessity of effecting cures and stresses the importance of correct distinction being made of all types of luxation, for each of which varying manipuations are necessary.

Ordinary examination shows absolute functional disability. The lower portion of the limb is either raised or trails on the ground, whilst the limb itself is almost always in extension.

The peculiar carriage of limb due to various displacements of the head of the femur is detailed for each.

Only if an examination is made within two hours of the accident can palpation be relied upon.

Change in length of limb (method of measuring explained), swelling, pain and crepitation are other clinical signs. The author, however, details cases which prove the necessity of radiological proof, even when otherwise definite positive or negative diagnosis seemed correct.

1. A longitudinal fissure of the epiphysis of the femur extending for 2 cm. from the superior line of union as shown by radiography, distinguished this case in a 9 months' old dog from a luxation as previously diagnosed.
2. By a screen the pelvis was seen to be lozenge-shaped. The left half of pelvis had slipped forward and was 2 cm. away from the right half at the symphysis. The articulation of limbs was correct. Palpation confirmed diagnosis—sacro-iliac luxation on the left side and pubic fracture. (The author could not confirm radiologically: he has never obtained a suitable pubic radiograph.)
3. A dog showing all the signs of a left antero-superior coxo-femoral luxation clinically was not so affected when examined radiographically. A more careful clinical examination showed an ankylosis of the femorotibial joint, whence shortening of the limb.
4. A dog showing normal carriage of the leg, with moderate swelling and pain, no crepitation and very slight shortening, was diagnosed as a case of contusion, or at most torsion of the coxo-fermoral joint. Radiography proved that slight upward luxation of the femur had dislodged a chip off the superior border of the acetabulum, the femur then resting in the hollow so formed. The free chip of bone was visible.
5. No sign of luxation was found in a Pekingese, but examination was difficult owing to the thick coat and pain evinced on palpation. Rheumatism was suspected. Radiography revealed an antero-superior coxo-femoral luxation.

Details relating to manipulation of the patient are outlined.

C. V. W.

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[Estimations of Blood Pressure in Dogs and their Diagnostic Significance. (Trans. title.) Haack, S. (1933.) (*Thesis, Faculty of Veterinary Medicine, The University, Leipzig.*)]

After giving a review of the literature on this subject the author describes his apparatus and the method he employs to obtain the arterial blood pressure of dogs.

Observations were first carried out on ten healthy dogs, from which it appears that the blood pressure varies greatly in the individual and is highly sensitive to external influences such as the presence of strangers, unaccustomed surroundings, noise, fear and other forms of excitement. This makes it difficult to ascribe any rise in pressure to a pathological condition. To be of any value the average blood pressure of the

individual when in health should first be known so that a comparison may be made with the reading obtained when the patient is ill.

Data have been collected from thirty dogs sick from different causes. Parasites in the intestine appear to exert no influence; in cases of fever the pressure varied greatly in the individual; in two instances of tuberculous pleurisy with accumulation of fluid in the pleural cavity the blood pressure fell and maintained a lower level when the fluid was removed and animals in pain always showed a rise in pressure.

Except in cases of chronic interstitial nephritis the blood pressure is variable and irregular in animals suffering from disease, and as an aid to diagnosis or prognosis is not of great value.

N. S. B.

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[Stimulating Heat in the Bitch by the use of "Unden." August, H. M. (1934.) *Tierärztl, Rundschau,* No. 6. 89-91.]

Unden is a preparation containing follicular hormone, which has been used with some success by the author to stimulate heat in the bitch when this is weak or almost negligible. If no indications of heat are apparent it is, however, ineffective.

The signs of heat are described in detail, the phenomena being grouped into three phases. There is first a swelling of the external genitals with the development of a characteristic odour, then a reddish-brown secretion may be observed and the bitch seeks service. Lastly, the secretion alters and becomes almost colourless.

If heat is slow in developing, or appears to be tailing off, a course of treatment lasting several days is recommended.

N. S. B.

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[Osteosarcoma in Mammals. (Trans title.) Schwarz, G. (1933.) (Vet. Med. Faculty, Leipzig.)]

This is a dissertation presented by Schwarz, for his doctorate, to the Veterinary Faculty of the University of Leipzig. One half of the publication comprises the description of some twenty cases of osteosarcoma collected from the literature. The site, macroscopic appearance, associated symptoms and histology are given in each instance. Following upon this two cases, which the author investigated, are described in detail. One involved the foreleg of a deer and the other the bony structures of the chest cavity of an ox. The bony proliferation was such in the latter that the normal lamellar formation and bone-marrow spaces could be frequently detected.

From his observations Schwarz maintains that this type of tumour grows very slowly and metastasis seldom occurs. The pathological effect of the growth on the host is to be regarded as local rather than general, in contra-distinction to what is the case with the commoner sarcomata and carcinomata. Osteosarcomata, however, continue to grow steadily and may assume considerable proportions.

Three photomicrographs of sections, prepared from the author's two cases, are reproduced.

N. S. B.

Reports

CITY OF BIRMINGHAM

Report of the Veterinary Department for the Year 1933

Part I of the 53rd Annual Report of the City of Birmingham Veterinary Department shows that the veterinary staff of the Corporation deal with the inspection of meat and other foods; the inspection of markets, slaughter-houses and food preparation premises; carry out the work under the Public Health (Meat) Regulations, Sale of Food Orders and Merchandise Marks Act, and the Agricultural Products (Grading and Marking) Acts.

Under this section it is shown that in addition to the public slaughter-houses, in which the following animals were slaughtered last year:—

Beasts	Calves	Sheep and Lambs	Pigs	Total
40,738	75,417	356,670	74,950	547,775

there are also 94 private slaughter-houses in the City, 50 of these being registered and 44 annually licensed: in the latter a total of 294,798 animals were slaughtered, made up as follows:—

Beasts	Calves	Sheep and Lambs	Pigs	Total
6,923	3,555	66,095	218,225	294,798

The imported meat received into the City Meat Market comprised the following:—

	Tons
Beef	11,614
Mutton	13,192
Pork	183
Offal	1,280
	26,269

In the live Pig Market a total of 111,827 pigs passed through.

During the year the following meat and other foods were certified as unfit for human consumption and were destroyed:—

No. of Surrenders	Class of Foodstuffs	T.	c.	q.	lbs.
10,378	Meat	477	10	0	0
865	Fish	106	7	1	10
986	Poultry, Game, etc.	16	11	1	20
684	Fruit and Vegetables	340	0	0	11
128	Miscellaneous ...	4	11	1	13
13,041		945	0	0	26

Part II of the Report deals with the work under the Diseases of Animals Acts carried out by the Veterinary Department.

Under this section it will be seen that there was an outbreak of foot-and-mouth disease at the public abattoir on January 9th, and an "infected area" was made of approximately 15 miles around the infected place. The city was further affected owing to an outbreak at Kinver on February 22nd.

Four outbreaks of parasitic mange in horses were dealt with during the year, and nine outbreaks of swine fever.

In the city there were 26 cases of tuberculosis in cattle dealt with under the Tuberculosis Order. The report shows that the following animals were found dead on arrival at stations: 184 pigs, 15 sheeps and 4 beasts.

Owing to the lairage at the public abattoirs not being sufficiently large to accommodate the animals being received, by special arrangement with the Ministry of Agriculture and Fisheries eight outside lairs in the vicinity of the markets have been approved and are now recognised for purposes of licensing, as part of the market lairs.

Part III of the Report deals with the work carried out by the Veterinary staff in connection with the various Milk and Dairies Orders, this comprising the inspection of cows and cowsheds within the City area and the taking of samples of milk for the detection of tubercle bacilli.

The work under this section shows that there were 109 dairy farms in the City housing 1,585 milch cows. Of these one herd was producing "Certified" milk and ten herds "Grade A" milk.

In connection with the detection of tubercle bacilli in the milk sent into the City from outside sources, 166 samples were taken from the City dairies and 1,694 samples were taken from churns, etc., sent in from outside. Of this total of 1,860, 127 samples were found infected.

As a result of this, under the Milk and Dairies (Consolidation) Act, 1915, Section (4), the outside local authorities were notified in connection with the detection of 108 infected samples of milk coming into the City from outside sources, and as a result 120 cows were slaughtered under the Tuberculosis Order.

Part IV of the Report deals with the work in connection with the Corporation stud. The stud of horses owned by the Corporation totalled 401.

The report shows the very low cost of the upkeep of horses during the year. The following return shows the net cost per horse per week:—

	s.	d.
Provender and Bedding ...	7	9·8
Shoeing	2	10·6
Harness		6·7
Superintendence		9·0
Wages (Stable)	7	4·6
„ (Granary)	2	2·1
Sundries	1	3·3
Int. and Sinking Fund ...		3·4
National Insurance and Superannuation	1	11·6
	25	1·1

The old horses are sold by the Veterinary Department and new horses purchased by them. The Veterinary staff are also responsible for the purchase of provender, harness, for the shoeing of the horses, and sundries connected with the stable.

The last page of the report gives a graph showing the cost of the following from the year 1924 to 1933: Wages and insurances, provender and bedding, shoeing, sundries, superintendence, harness, rent, etc. From this graph it is seen that the cost of provender and bedding has fallen from 13s. 2·52d. to 7s. 9·8d. The cost of wages and insurances has slightly risen from 10s. 10d. to 11s. 6·3d., and the cast of shoeing, sundries, superintendence, harness and rent, etc., does not show much change.

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ARMY VETERINARY SERVICE IN INDIA

The Annual Administration Report for the year 1932-33 is to hand, and a few salient facts are worthy of note.

The average animal strength, including chargers and animals in Remount Depôts was as follows: Horses, 33,200; mules, 27,431; camels, 3,825; cattle, 9,104; donkeys, 116.

With regard to specific disease, anthrax was slightly more prevalent, 6 horses, 10 mules, and 5 camels having died. Of foot-and-mouth disease there were 1,053 cases as compared with 898 the year previous. The incidence of rinderpest was much less. A number of experiments were conducted to test the efficiency of goat virus inoculations and also to find out whether serum simultaneous inoculations could be carried out on milking animals on their standings. It was ascertained that the effect on the milk yield was practically negligible as long as the animals were fed normally and disturbed as little as possible, while in no case did abortion follow the inoculation, although several of the cows treated were within two months of calving. Consequent on these experiments serum simultaneous inoculation is now to be carried out more extensively, and it is hoped thereby to decrease the losses due to rinderpest.

With regard to contagious abortion in the donkey stud at Mona, the use of living virus as

vaccine was suspended, and efforts were made to control the disease by stricter segregation of breeding stock.

As is usual, strangles was prevalent in Remount Depôts, particularly at Mona and Sargodha, 1,489 cases occurring as compared with 1,199 cases last year, with a total mortality of 34 as compared with 30 last year. As a rule the disease takes a very serious form in India, especially in horses, and many animals which recover are sick for long periods, and in some of them normal development is seriously interfered with.

Fourteen cases of rabies were recorded, two in cattle and the remainder in horses and mules. The use of Semple's anti-rabic vaccine for in-contact horses and cattle was continued with success.

Two small outbreaks of influenza occurred in the Northern Command, and two larger ones in the Poona Horse and Ahmednagar Remount Depôt. The disease was mild in type, and no deaths occurred. In the latter outbreaks isolation methods have failed to limit the spread of the disease; " mixing " was practised in order to shorten the duration of the outbreaks.

Glanders, hæmorrhagic septicæmia, jhooling, Johne's disease, nasal granuloma, piroplasmosis (equine) and trypanosomiasis (camels chiefly) showed less incidence than in the previous year. There were 49 cases of tetanus as against 35 last year, and 13 cases of tuberculosis as against 11 last year.

In the working of Army Veterinary Service in India, retrenchment measures were continued in respect to a further reduction in the I.A.V.C. Reserve from 100 to 65. A temporary increase of two British officers (non-continuous service) was made pending the appointment of Indian members of the Royal College of Veterinary Surgeons to commissions in the I.A.V.C.

The courses in Animal Management for Officers and N.C.O.'s at the Army Veterinary Schools were not resumed. Elementary instruction under District arrangements offers a poor substitute, and it is considered that if a resumption of these courses at schools is not effected, horsemastership in the Army cannot fail to deteriorate.

J. M.

SPORTSMEN AND THE CANCER CAMPAIGN

Mr. Tom Walls, the well-known actor, and winner, with April the Fifth, of the Derby in 1932, has instituted an appeal to the sportsmen of Great Britain to subscribe £25,000 to the British Empire Cancer Campaign. The effort will be aided by an influential committee, of which Lord Derby is chairman and Lord Westmorland vice-chairman. Contributions should be sent to the Tom Walls' Sportsmen's Fund, Lloyds Bank Limited, Guards Branch, 6, Pall Mall, S.W.1. Lord Derby has given the fund a start with a personal donation of £200, and during the next few weeks a number of events will give sportsmen the opportunity to respond to the appeal.

N.V.M.A. Divisional Reports

LANCASHIRE VETERINARY MEDICAL ASSOCIATION*

Meeting at Chester

A General Meeting of the Lancashire Veterinary Medical Association was held at the Queen's Hotel, City Road, Chester, on Friday, April 27th, 1934, at 3 p.m.

The Chair was occupied by the President, Mr. J. Holroyd, F.R.C.V.S., D.V.S.M. (Vict.), other members present being Messrs. A. J. Wright, H. T. Matthews, A. B. Kerr, H. H. Aldred, A. H. Leyland, J. B Garside, C. F. Shawcross, H. R. Hewetson, H. Sumner, Junr., D. Lloyd Jones, E. A. Comer, J. L. Taylor, A. L. Bragg, W. Woods, J. H. White, F. G. Edwards, R. Hughes, H. Holroyd, Warwick Fowle, C. W. Hargreaves and A. L. Mullen (Hon. Secretary). Visitors—Messrs. H. Tudor Hughes, L. Pitcher, T. F. Stokes and T. Lees May.

Apologies for unavoidable absence were received from Messrs. G. O. Davies, R. C. Locke, G. Mayall, A. B. Mattinson, E. J. Burndred, A. W. Noel Pillers, H. G. Hewetson, R. S. White, Professor Gaiger and J. Spruell.

The minutes of the previous meeting, having been published in *The Veterinary Record,* were taken as read.

Professor Gaiger's Illness.—The President referred to the serious illness of Professor Gaiger and informed the meeting that an operation was to be performed that day. He stated that Professor Gaiger had not been well for some little time and the illness had now developed to a serious extent. He proposed that a letter of sympathy be sent with best wishes for his speedy recovery. Mr. R. Hughes seconded the proposition which was carried unanimously.

Correspondence.—(1) From the British National Committee of the International Veterinary Congress, acknowledging receipt of donation of five guineas.

(2) From the Secretary of the Royal College of Veterinary Surgeons appealing for contributions to the Endowment Fund for the Central Library of the R.C.V.S. After a short discussion it was resolved that the consideration of the matter be adjourned until the next meeting.

(3) From the Secretary of the Yorkshire Veterinary Medical Association inviting the Lancashire Division to join in mutual support of the two Divisions' candidates for election at the forthcoming R.C.V.S. elections by the insertion of advertisements in the veterinary periodicals.

Mr. W. Woods proposed that the Division combine with the Yorkshire and North Eastern Divisions in the issue of an election circular if

* Received for publication, May 23rd.

arrangements could be made, or alternatively, an election advertisement in *The Veterinary Record,* the ultimate decision to be left in the hands of the President. Mr. H. R. Hewetson seconded the proposal, which was carried unanimously.

(4) From the National Veterinary Medical Association enclosing copy of letter sent to Mr. M. G. Michie conveying the decision of the Organising Committee with reference to the erection of an R.S.P.C.A. Hospital in Liverpool.

Mr. H. Sumner, Junr., gave particulars of his interview with the Organising Committee in London and the President proposed that the best thanks of the Division be tendered to Mr. Sumner for his efforts on behalf of the Division. He thought the matter had ended very satisfactorily. Mr. Hewetson seconded the President's proposition, which was carried unanimously.

From the National Veterinary Medical Association drawing attention to the Articles of Association and inviting the Division to submit names of representatives to serve on the Council. It was proposed by Mr. A. L. Mullen, seconded by Mr. H. R. Hewetson, and unanimously resolved that Professor Gaiger, Messrs. W. Woods, J. O. Powley, J. Holroyd and A. L. Mullen (Hon. Secretary) be nominated to serve on the Council of the N.V.M.A.

Nominations for Membership.—Mr. A. L. Mullen nominated Messrs. J. K. Calderwood, M.R.C.V.S., Clitheroe, and T. Lees May, M.R.C.V.S., Winsford, and Mr. Warwick Fowle nominated Mr. J. H. Wood, M.R.C.V.S., Wallasey, for membership of the Division.

Notice of Motion.—The President gave notice that at the Summer Meeting of the Association at Southport in June he will propose:—"That the revised constitution of the Association be adopted."

He stated that the revised Rules had been considered at many meetings—they had actually been under consideration for four years—and it was now desirable that they be adopted. A copy would be sent to each member of the Association prior to the meeting and if any member had any criticism or suggestion to make, he should submit the same in writing before the meeting in good time, so that it could be duly considered. The President referred to the assistance in drawing up the Rules that had been rendered by Dr. Bullock and he proposed from the Chair that the very best thanks of the Division be tendered to him. Mr. Warwick Fowle seconded the proposition, which was carried unanimously.

REPORT OF COUNCIL

A Council meeting of the Association was held in Manchester on Wednesday, March 14th, 1934.

1. The following report from the sub-committee on the "Scheme to Initiate Assistance in Clinical Work" was received and considered.

A Scheme to initiate assistance in Clinical Work.

1. Your Committee (R. S. White, H. R. Hewetson, A. W. Noel Pillers), have had several consultations.

2. We have taken as terms of reference, the discussion on the above subject which took place at the meeting when they were appointed.

3. We find that about 30 per cent. of the members are whole-time officials, teachers, or retired veterinary surgeons. For these we can suggest no special help.

4. For the remaining two-thirds, we feel that the small animals interest them all, and that the cow comes next for the general practitioner.

5. We had no exact instructions as to the amount of money we might use in our recommendations, but we feel that £10 to £15 per annum ought to furnish the Association with aids of a gradually increasing usefulness.

6. Of all the subjects mentioned at the meeting, we feel that a good bronchoscopist is an urgent need. We have not been able to obtain the price of a second-hand bronchoscope, but we think that two tubes—large and small, a pair of forceps, an illuminator, and a syphon, ought to suffice, and that these ought to be obtained for about £10, and added to from time to time. We are pursuing the matter further. Chevalier Jackson's book would also be necessary.

7. In the meantime, we recommend the purchase at about £5 15s. of a combined ophthalmoscope, auroscope, rhinoscope, and an illuminator for the mouth, together with Gray's "Veterinary Ophthalmology." We think that such an instrument could be used for vaginascopy.

8. We suggest that a circular letter be drafted and sent to members of the Association, stating the above recommendation and asking for applications from those willing to use it for 12 months, to report on it in a paper, and to help members of the Association.

9. Such a letter might ask for volunteers for any special instruments in which they might be interested, because we feel that so much depends upon the inclination of the enthusiastic individual.

10. The selection of the applicant should rest with the Council of the Lancashire Veterinary Medical Association.

11. An X-ray outfit is beyond the price the Association could pay.

12. We are in correspondence with a reliable firm as to the production of a vaccine for infectious feline enteritis and with another regarding endoscopy of the cow's uterus.

It was resolved to recommend "That a circular letter be sent to members of the Association inviting applications (*a*) from those willing to use a combined ophthalmoscope, auroscope, rhinoscope and illuminator for the mouth, together with Gray's 'Veterinary Ophthalmology' (Section 8 of report); (*b*) from any who are specially interested in any special instrument or appliance (Section 9 of report)."

2. It was resolved to recommend:—

(*a*) That Messrs. William Woods, F.R.C.V.S., and Joseph Abson, D.S.O., T.D., F.R.C.V.S., be elected Hon. Associates of the Association.

(*b*) That an honorarium of £5 be made to Miss Shipton for her services in connection with the clerical work of the Association.

3. Consideration was given to certain arrears of subscriptions and the Secretary was instructed to address letters to five members of the Association stating that unless the arrears were paid before the next general meeting the Council would recommend that their names be removed from the list of members.

The President moved the reception and adoption of the Council's report. Mr. H. T. Matthews seconded and the proposition was carried unanimously.

Nomination of Honorary Associates.—The President nominated Messrs. William Woods, F.R.C.V.S., and Joseph Abson, D.S.O., T.D., F.R.C.V.S., for election as Hon. Associates of the Association.

Paper.—The President then called upon Mr. H. Tudor Hughes, F.R.C.V.S., B.Sc. (Lond.), Oswestry, to open a discussion upon "Common ailments of the Foal, from Birth to Weaning."

[Mr. Hughes' paper, and a report of the general discussion which followed its presentation, will be found in the General Articles Section of this issue.—Ed. *V.R.*]

A vote of thanks to Mr. Hughes was proposed by Mr. H. Sumner, seconded by Mr. Warwick Fowle, and carried with acclamation.

Pathological Specimens.—Interesting pathological specimens were exhibited by Mr. Warwick Fowle and Mr. Tudor Hughes.

A. L. Mullen, *Hon. Secretary.*

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DUMFRIES AND GALLOWAY V.M.A.*

President's Address at Carlisle

A meeting of the above Division was held at the Crown and Mitre Hotel, Carlisle, on Tuesday, February 27th, 1934, the President, Mr. O. Stinson, Appleby, being in the chair.

The following members were present:—Messrs. F. A. Davidson, W. T. Hewetson, A. J. Kennedy, W. L. Mackenzie, N. H. McAlister, A. J. Milligan, R. Craig Robinson, A. Young, Dr. J. Russell Greig (Honorary Member), and G. A. Sangster (Honorary Secretary). Mr. Dyson, Appleby, was present as a visitor.

Apologies for absence were received from Miss N. Burnett, Messrs. J. Lindsay, J. McQuaker, W. Scott and R. Simpson.

The minutes of the previous meeting, as published in *The Veterinary Record*, were approved on the motion of Mr. A. Young, seconded by Mr. A. J. Milligan.

Life Member.—The confirmation of Mr. James Bell, Carlisle, as a life member of the Division, was proposed by the President and seconded by Mr. R. Craig Robinson.

Election of New Member.—Mr. A. Steele, Dumfries, proposed by Mr. F. A. Davidson and seconded by Mr. A. Young, was elected a member of the Division.

In a few appropriate words the President welcomed Dr. J. Russell Greig.

Correspondence.—A memorandum was read regarding the "Dalrymple-Champneys" Cup and Medal. A letter was also read from the Secretary of the National Veterinary Medical Association requesting a list of the members of the Division. The Secretary was instructed to send the required list. At this point Mr. McAlister moved "That this Division asks the National Veterinary Medical Association to consider the position of their members who are not members of this Division and expresses the opinion that, before becoming members of the National Veterinary Medical Association, they should be members of a Division." This motion was carried and the Secretary was instructed to communicate it to the Secretary of the National Veterinary Medical Association.

A communication was read by the Secretary, asking the Division and individual members of the Division to consider subscribing towards the expenses of British delegates to the International Veterinary Congress at New York. It was proposed by Mr. R. Craig Robinson, seconded by Mr. F. A. Davidson, and agreed, that the sum of £2 2s. be sent from the Division.

Honorary Membership.—On the motion of the President, seconded by Mr. A. J. Milligan, Mr. E. A. Davidson was nominated as an Honorary Member of the Division. In moving, the President stated that Mr. Davidson had been their Honorary Secretary for eight years and during that time he had been a most enthusiastic worker for the good of the Division.

Presidential Address.

The President (Mr. Oscar Stinson) then gave his Address from the Chair, in the following terms:—

It is with great pleasure that I address you from the Presidential Chair; and I hope to plough another furrow that will be worthy to lie alongside the one that Mr. Allan has just completed so skilfully, and those others that have been turned by his predecessors.

I had hoped to avoid making a Presidential Address, but being told by you that such was my obligation to you, I have decided to touch on some matters of interest to the profession, in the hope that I may somewhere be of some service.

We all realise that the present time is one of great moment to the world. In all professions and trades new methods are being sought in order that greater efficiency may be obtained; those who do not move with the times and seek new paths are quickly losing their places in the world. We, in the veterinary profession, with truth may say that we have kept our place in

* Received for publication May 21st.

the general advance in knowledge and efficiency.

It is a matter of great difficulty for the general practitioner to keep his place in this general movement forward, and to obtain and make use of this new knowledge. In this direction, I would suggest that it is of value to the practitioner to have a student with him fresh from College where this new learning is being taught and kept up to date.

But new knowledge is not all that is necessary for success. New business methods must be applied, not only for the pecuniary advantage of the veterinarian, but also so that he may work for his clients more economically. We are professional men in our own eyes but it is as business men that we deal with our farmer clients. With them there is an economic value in each animal that we attend. This fact must always be present in our minds when we attend our patients professionally. Most of you will have read the papers presented by Mr. Noel Pillers and Mr. Curbishley to the Lancashire Division recently. With apologies to these gentlemen for abstracting words from their contexts, I would quote the following: "We can at least adopt the methods of good tradesmen . . ."; again, "We go out in the world to meet conditions very similar to those of any trade . . ." and again, ". . . the first point to be brought out is service."

The last is from Mr. Pillers and I would like to see his succeeding sentences framed in every veterinary surgeon's bedroom, ending with the sentence in block capitals, "IT IS HOPED THAT IN THE FUTURE WE MAY BE ABLE TO RENDER BETTER SERVICE."

If we adjust our fee to each case with regard to its value and yet render the best service in every case regardless of the money to be earned in that case, then indeed we shall fairly earn our money, create a demand for our services, and in the end, by being more in demand, we shall be richer men. If we deliver the goods at a reasonable price many of the bad book debts will go, as the clients will recognise, that our demands are fair.

Now if we are to set out to make full use of modern knowledge and also always to "deliver the goods," then life is too short for us to do the whole work ourselves, and indeed few would be competent to do so. To-day there is a tendency to turn to the specialist and this is natural in modern life. We cannot each of us be a pathologist, bio-chemist, etc., but the general practitioner needs to be a bit of each and has to send material to the specialist for detailed information and knowledge. In the same way as we should aim at co-operation between student and practitioner for our mutual advantage, so we should try for co-operation between the specialist and the practitioner, veterinary colleges and practitioners, and finally whole-time men and practitioners.

This last brings me to a question that has brought much discord into our ranks. I do not wish to enter into the controversy here, but I do wish to say that whatever the grievances are which we practitioners may think we have, and however legitimate they may really be, they should not prevent us from working in loyal and friendly co-operation with the individual whole-time man once he is appointed.

It is this co-operation in all branches of our work that I would ask for. At present there are many practitioners who would fear to call in a rival in the same locality, in case he should fail to co-operate. We should be able to depend on each other for full help at all times, and yet maintain a keen rivalry in our work; since, apart from all else, competition leads to efficiency in all things.

We look upon Mr. Henry Gray as a canine specialist; upon the late Mr. William Hunting as an equine specialist; upon Mr. Hugh Begg as a bovine specialist, etc., etc., and in our lesser way, most of us tend to deal especially with one kind of animal; but unfortunately we spend much of our time on the others. The public, however, have no way of distinguishing one type of veterinary from another, save for his general reputation as a veterinary surgeon. If a practioner whose work lies mainly with horses fails to cure a dog of some typical complaint, or if one who deals mainly with dogs fails to diagnose an obscure lameness in a horse, then the reputation of the profession is at stake. Under present circumstances, the general practitioner must deal with all patients to earn a living; and each client has, as a rule, only one veterinary, however varied the kinds of animal that he may keep. Might it not be possible for students at colleges to pay attention especially to one class of animal, and to see practice in such types as most of them do at present, but with this difference—that a choice of papers be set in the final examination? (I do not suggest that the other types should be neglected.) If this were done, the Diploma could show each veterinary surgeon as a horse, cattle or dog doctor. In this manner, every new practitioner would be potentially a specialist and would be able to concentrate on the one species, since his services would be demanded principally along that branch of work. If this were the case, who can foretell the extent of the progress of knowledge, as the result of many lifetimes spent on the one line; or how many great men might be produced of the type that are so common in human medicine? It would also come about that in each area there would be scope for men qualified along different lines, and these men would work in combination with each other and the public could distinguish between them.

Before I conclude, I should like to say a few words on the double intradermal tuberculin test as applied to pedigree cattle for sales. When the test is not of primary importance we recognise the definite positive and the negative in the double intradermal test and also we recognise the doubtful reactor—or at least the reactor that takes us some time and thought before we can come to a decision. In the ordinary routine work (for the purpose of retention or elimination of a subject, etc.) often, necessarily and justifiably, we recognise only a positive and negative reaction. This is legitimate as the decision is reached by a detailed examination of the swelling and it is a professional opinion. But when we deal with animals of value for sale, especially the pedigree beast, we also meet with these doubtful reactors. Then comes the problem. Are we justified in robbing a client of anything from £30 to £200 on purely a personal opinion, even though based on professional training? One feels inclined to say "No!" and to give the owner the benefit of the doubt. This seems only honest and right—yet I would draw your attention to the fact that to do this, in the long run, will be of detriment to the owners and therefore to ourselves; and is in reality a dishonest act. I speak to myself as much as to anyone else. The importance of this will be realised when I state that most of the bulls that were purchased for export on a particular occasion proved to be reactors, when they reached their destination. This is serious for us. Out of fairness to our profession, we can assume that none of these were positive reactors when tested at the time of the sale; but we must admit that some at least of these reactions must have been doubtful. If so, then these should be always treated as positives—at least to the extent of not issuing certificates for them. From the buyers' point of view it is dishonest to issue such a certificate, for obvious reasons: it is dishonest to the owner because, though it may at the moment seem to be to his advantage, yet if the animal should prove to be positive the same buyer will never approach him again. Finally, looked on in the above light, it can be seen that it is dishonest on the part of the tester, because, although his reasons for passing the slightly doubtful may appear to be genuine, he is going contrary to his professional opinion. The double intradermal test is perplexing buyers and stock owners throughout the country. The variations of opinion on the general reading of the test reactions and the discrepancies between the individual readings are casting disrepute both on our profession and on a thoroughly reputable test. I feel convinced that the slightly doubtful reactor is at the bottom of it all, and I consider that we should all agree to look upon an animal giving such a reaction as positive, whatever his or her value may be.

In conclusion, let me say, once more, how much I appreciate the honour of being elected as your President and I thank you, both for this and for the knowledge that I have gained from you at our meetings. I would advise all young men entering our ranks to become members of the N.V.M.A. and to attend regularly the meetings of their division.

Next Meeting.—The President having been cordially thanked for his address, the members passed to the consideration of the place of next meeting. It was agreed to hold this meeting, which would be in the form of a summer outing, towards the end of June, it being left for the President and Secretary to arrange the date and place.

The meeting adjourned for lunch in the hotel.

Presentation.—At the re-opening of the meeting the President, on behalf of the members of the Division, presented to Mr. F. A. Davidson, the retiring Secretary, as a token of their esteem for the eight years' faithful service he had rendered, a gold watch, suitably inscribed. Mr. Davidson suitably replied.

Paper.—A paper on "Emaciation in Cattle" was now read by Mr. W. T. Hewetson. [Mr. Hewetson's paper is reproduced in the Clinical Section of this issue.—Ed., *V.R.*]

Votes of Thanks.—After a lengthy and interesting discussion, the President thanked Mr. Hewetson for his most interesting paper.

The President moved a vote of thanks to Dr. J. Russell Greig for his attendance, which was accorded enthusiastically, and the payment of a similar tribute to the President for his conduct of the proceedings terminated the meeting.

George A. Sangster, *Honorary Secretary.*

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DERBYSHIRE DIVISION, N.V.M.A.*

Avian Tuberculosis Diagnosis: Demonstration at Derby

A meeting of the Derbyshire Division was held at the Agricultural Institute, St. Mary's Gate, Derby, on Tuesday, April 22nd, when there were present: Major P. M. Abson in the Chair, Messrs. T. V. Bagshaw, H. S. Cockburn, J. C. Deville, G. Eaton, J. Edwardson, P. M. Evershed, O. V. Gunning, H. C. Gregory, W. L. Sheffield, H. L. Torrance, E. Wilkinson, and the Hon. Secretary, W. J. Ironside.

Mr. and Mrs. G. Durrant, Mr. J. O. Powley, Mr. F. A. Davidson and Mr. G. G. Rennie were present as visitors.

The minutes of the last meeting, having been published in *The Veterinary Record*, were taken as read and signed.

Nomination of New Members.—Mr. F. A. Davidson and Mr. G. Durrant were nominated for membership.

* Received for publication, June 5th.

Correspondence.—(1) From the R.C.V.S., asking for a donation towards the Endowment Fund of the library. It was agreed that the sum of £5 5s. be sent as a donation.

(2) From the National Horse Association, requesting continuance of support. It was agreed that the subscription, £1 1s., be paid.

(3) From the British National Committee, International Veterinary Congress. A proposition that financial support be given was put to the meeting and lost.

THE DIAGNOSIS OF AVIAN TUBERCULOSIS

Demonstration by Mr. W. J. Ironside, M.R.C.V.S., M.P.S.

The next business was the giving of a demonstration of the above by the Hon. Secretary, who accompanied his demonstration with the following observations:

I have ventured to bring forward this demonstration to-day mainly on two grounds:

1. Because I feel that, in so far as the greater number of our members are concerned, knowledge of this subject leaves much to be desired.

2. Because tuberculin testing is now of importance in the diagnosis of the disease and is likely to be quite widely used, and I consider that such testing falls properly into the province of the veterinarian.

I should like, in the very first place, to lay emphasis upon the fact that, in my opinion, considerable tuberculin testing of poultry will be necessary as a means towards the control of the disease and that if such testing is not done by the veterinarian it will be done by others.

So far as actual diagnosis is concerned it can be said to be based upon the following factors:

1. History and symptoms.
2. *Post-mortem* appearances.
3. Microscopic examination.
4. Tuberculin testing.

History.—The most common history is that of continuing losses by death in a flock of adult fowls. Age of birds is of some importance—the condition is of distinctly rare occurrence in birds under a year old.

Symptoms.—The commonest symptoms are progressive emaciation and lameness. For purposes of diagnosis neither is of the slightest importance.

Post-mortem Appearances.—These are of distinct value, and although tubercles may be present in various organs in the body, two organs—namely, the liver and spleen—are constantly affected. For purposes of diagnosis it is therefore not necessary to examine any other organ. If, however, diagnosis depends upon the examination of but one bird, the presence of what appear to be tubercles is not sufficient to establish it. Tumours are of quite frequent occurrence and a condition of multiple tumours in liver and spleen gives rise to a tubercle-like condition. Where, however, some number of birds is available for *post-mortem* examination and the finding in the liver and spleen is constant, diagnosis is established.

In the case of the single *post-mortem* examination it is always necessary to confirm by microscopic examination and in appropriately stained smears from either liver or spleen: acid-fast organisms are usually present in plenty.

Tuberculin Testing. *Wattle Test.*—This is the recognised and accepted test and it consists in the injection of ·1 c.c. tuberculin into the wattle. The reaction is read at the 48th hour.

Eye Test.—In this test ·1 c.c. tuberculin is injected into the tissue under the lower eyelid and again the reaction is read at the 48th hour.

I have used this test quite extensively and in recent times I have in each bird tested been applying both tests for purposes of comparison. The few results I have obtained are as follows:

Birds tested, 315: pass 274, fail 41.

Reactions: Wattle and eye, 13; wattle only, 5; eye only, 12; wattle definite, eye indefinite, 1; eye definite, wattle indefinite, 4; wattle indefinite, 2; eye indefinite, 4.

From these results it would appear that it may be necessary to apply both tests, but the number of comparisons made is as yet too few to warrant any dogmatic statement being made.

I had intended to have here to-day some number of birds showing various degrees of reactions to the two tests and I am sorry to have to say that I have been badly let down over this.

The circumstances are interesting although they have no bearing upon the subject we are discussing. They are as follows:

Some few weeks ago I tested a flock of birds and found a very large number of reactors. Actually the numbers were as follows: Tested, 37; pass 13; fail 24.

The position was so hopeless that I advised disposal of all the birds.

In the same field, however, but in another house about 100 yards away, there were some 140 birds of the same age, breed and rearing and these had been mixing freely with the heavily infected flock.

I reasoned that there should be at least some number of reactors among these and made arrangements to test so that I could bring reactors here. The result of the test, however, was: Tested, 140; pass, 137; indefinite reactions, 3.

I can only again say I am sorry and trust that you will agree that I appeared to have reasonable grounds for expecting reactors.

. . . . . .

Mr. Ironside then demonstrated the technique of testing and laid emphasis upon two points:

1. All birds to be tested should be handled and no bird showing emaciation should be subjected to test. The two reasons for this are that emaciated birds are not worth testing and that they are likely to give no reaction.

2. The needle used must be sharp.

Demonstration of the lesions was made by a number of preserved specimens.

Discussion

Arising out of the demonstration the following questions were asked.

Mr. Deville asked if there was any temperature reaction to the tests.

Mr. Davidson drew attention to the possibility of spread of infection from birds to cows and gave an instance where a number of indefinite reactors appeared in a tuberculin tested herd. It was found that tuberculosis existed in the poultry on the farm and the cows were then tested with avian tuberculin and well-marked reactions were obtained.

Mr. Davidson also asked if *post-mortem* examinations had been made.

Mr. Gunning pointed out that practitioners were being urged to take up poultry diseases and he asked if it was likely that the testing for tuberculosis would come to the practitioners. He said that, with reference to blood testing for bacillary white diarrhœa, he had equipped himself in order that he might undertake testing, but very little of it had come his way. He thought a similar state of affairs might arise in regard to tuberculin testing. Mr. Gunning referred to an American publication which showed evidence of spread of avian tuberculosis to pigs and asked if there was any such evidence available in this country.

Mr. Powley made reference to the fact that the time was coming when scheduling of poultry diseases would be brought into effect and said that in all probability the disease under discussion would be one of those so scheduled.

One result of such scheduling would be that it would fall to the veterinary profession to deal with the disease.

Mr. Evershed asked whether it might not be possible that birds emaciated from some other cause would be discarded.

Mr. Cockburn asked how tuberculosis could be distinguished from coccidiosis.

Mr. Ironside, in answer to the points raised, said that there was no temperature reaction to the tests. The tuberculin he had used was avian tuberculin kindly supplied by Major Dalling, of Burroughs Wellcome & Co. He did not query, and was not concerned in verifying, the accuracy of the wattle test, but he had made many *post-mortem* examinations of birds showing reaction to the eye-test and, in the short series of comparative tests to which he had referred, he had made *post-mortem* examinations in every case in which there was reaction to the eye test only and the finding had been positive in all. Replying to Mr. Gunning, the tuberculin test could not be compared with the blood test in that the latter was essentially a laboratory test, whereas the former was just as essentially a field test. He did know whether the practitioner would do the testing or not but he would again say that he thought considerable testing would be done in the future and that if members of the veterinary profession did not do it others would.

To the question of evidence of spread of infection from birds to pigs he replied that he knew of no information on the point in so far as this country was concerned.

In reply to Mr. Evershed, it was quite likely that birds suffering from conditions other than tuberculosis would be discarded, but since a negative reaction to the test was of no value in such birds the only way was to discard them and thus give the benefit of the doubt to the genuine non-reactors.

With reference to differentiation of coccidiosis from tuberculosis, there could be no possibility of confusion. In coccidiosis there were never present any structures of a tubercle-like nature and in tuberculosis these were never absent.

The future of the Veterinary Profession.—A free exchange of views took place in the discussion on this subject and as a result it was agreed that a resolution brought forward by Mr. Torrance should be forwarded to the N.V.M.A.

The members took tea together and this ended the proceedings.

W. J. Ironside, *Hon. Secretary.*

PROPOSED WHOLE-TIME VETERINARY OFFICER FOR EAST SUFFOLK

Felixstowe Urban District Council, at its last meeting, received a report from the Public Health Committee that they had considered the question of cattle diseases in relation to the public health, and particularly in relation to the public milk supply. They recommended the Council respectfully to request the East Suffolk County Council to appoint a whole-time veterinary surgeon to make routine inspections of herds in the county in co-operation with the officers of the local authorities, with a view to safe-guarding the public health, and especially the milk supply.

Dr. P. L. Giuseppi, chairman of the Public Health Committee, said no words of his were needed to point out the importance of a pure milk supply. East Suffolk was one of the few County Councils in England which had not appointed a whole-time veterinary surgeon.

The Council decided to forward the recommendation of the Public Health Committee to the County Council.

Edinburgh*

"Was there ever another such city to live in as Edinburgh?

'And I forgot the clouded Forth,
The gloom that saddens Heaven and Earth,
The bitter east, the misty summer
And gray metropolis of the North.'

Tennyson.

One regrets that this is all that our noble Laureate's experience of Edinburgh enabled him to say. The east winds do bite there fearfully now and then, and blow a dust of unparalleled pungency in your eyes as you cross the North Bridge; but, with that exception, what a city! Gray! why, it is gray, or gray and gold, or gray and gold and blue, or gray and gold and blue and green, or gray and gold and blue and green and purple, according as the heaven pleases and you choose your ground! But, take it when it is most sombrely gray, where is another such gray city?

. . . . And only let the sun strike out, and lo! a burst of new glories in and around. The sky is then blue as sapphire overhead; the waters of the Forth are clear to the broad sea; the hills and the fields of Fife are distinctly visible from every northern street and window; still more distant peaks are discernible on either horizon; and, as day goes down, the gables and pinnacles of the old houses blaze and glance with the radiance of the sunset. It is such a city that no one, however familiar with it, can walk out in its streets for but five minutes at any hour of the day or of the night, or in any state of the weather, without a new pleasure through the eye alone."

David Masson
"Edinburgh Sketches and Memories."

* Meeting place of Congress, N.V.M.A., July 30th—August 3rd, 1934.

IN PARLIAMENT

The Milk Bill in Committee

The Milk Bill entered upon the Committee stage in the House of Commons on Wednesday of last week, when on Clause 9 (payments for securing pure milk supply) the Deputy-Chairman (Captain Bourne) said: With regard to the first Amendment in the name of the hon. and learned Member for East Bristol (Sir S. Cripps)—in page 11, line 15, after "Treasury," to insert:

"*(including the exercise of powers conferred upon the Minister under the provisions of the Diseases of Animals Acts,* 1894 *to* 1927."—

I shall be glad if he will explain it to me. I am not certain what he proposes.

Sir S. Cripps: The purpose is to enable the moneys which are to be expended under this Clause by the Minister to be related, in accordance with the powers which he possesses under the Diseases of Animals Acts, to tuberculous herds. Unless some such words are put in, he will not have power to utilise this money for such purpose.

The Deputy-Chairman: I am not certain the Amendment is necessary. However, I will let the hon. and learned Gentleman move it to enable the Minister to reply.

Sir S. Cripps moved accordingly, saying:

The object of putting down this Amendment is really to raise the question as to whether the Minister has full powers to utilise the moneys which are being provided for improving the quality of milk supplied in dealing with tuberculosis among cattle on the lines of the Diseases of Animals Acts. That is to say, we should set up an inspectorate and go in for isolation, slaughter and various other things for dealing with all the forms of tuberculosis which occur, as if they were diseases in animals, not merely certain specified and limited forms of tuberculosis but all forms, and all cases of tuberculosis in milk. We want it to be clearly specified that the right hon. Gentleman can deal with the matter as a single authority, not merely leaving it to the county councils and other bodies who, according to the report of the Committee, have not been carrying out inspection and other duties and powers they possess, in an efficient and proper way.

Mr. Walter Elliot: I think we are at some cross purposes over this Clause and the Amendment put down by my hon. and learned Friend. Clause 9 places at the disposal of the Minister in England and the Secretary of State in Scotland this maximum sum, the object of which is the production of milk for human consumption, pure and free from the infection of any disease. We intend to achieve that object by a campaign against tuberculosis in cattle, and the Clause provides that the money may be used to pay registered producers sums of money if they produce milk in conformity with prescribed conditions. This is in addition to and not in substitution for the existing powers under the Diseases of Animals Acts, 1894 to 1927, and the Tuberculosis Order, 1925. Under that Order the Minister of Agriculture and Fisheries, in virtue of powers vested in him under the Diseases of Animals Act, 1894 and 1925, and other powers, makes an Order that any person having in his possession any cow suffering from tuberculosis, or which appears to be suffering from tuberculosis, shall without avoidable delay give information of the fact to the local police force, and the police force then transmits the information to the local authority. Thereupon, the provisions of the Act come into force. We put an inducement before the owner of a herd to make him co-operate whole-heartedly with the authorities in this campaign of cleaning up the herds.

After consideration of the report of the Cattle Diseases Committee we came to the conclusion that the best way will be to make these small grants, because it is a well-known maxim that more flies are caught in a jar of honey than in a hogshead of vinegar. If we can offer this inducement to the proprietors to come in with us in the campaign, we shall get a much speedier start and more rapid development than by merely relying upon compulsory Orders, which we have under the Diseases of Animals Act. There is no intention to neglect our powers under the Diseases of Animals Act. We intend to press them in every possible way. I am sure that we shall have a much greater development of the veterinary service under these provisions than ever before, because unless there is some veterinary inspection dairy herds will not draw the premium. Farmers themselves will demand a veterinary inspection and services, which up to

now they have rather resisted because they considered it would involve them in heavy expenses without any benefit. In the future, with this benefit they will be eager to take advantage of veterinary inspection and service. We are maintaining our powers under the Diseases of Animals Act, and superimposing this additional scheme. The two working together will, we believe, mean that we shall make more rapid progress than ever before. I do not think the Amendment is necessary and I hope the hon. Member will not press it.

Mr. T. Williams: We must express our disapproval with the policy of the Government in this Clause. The right hon. Gentleman says that this policy is supplementary to any existing powers he may have. All the powers which the right hon. Gentleman has now are not being used. In county after county no inspections ever take place, and my hon. Friend tells me that the agricultural members of the Derbyshire County Council are doing their best to get the only inspector in the county dismissed. The right hon. Gentleman says that in providing a premium he will encourage the better type of farmer to strive to obtain it, but the premium he offers, if it is 1d. per gallon, will only cover 43,000,000 gallons of milk out of the 425,000,000 gallons, and if it is ½d. it will only cover 86,000,000 gallons out of 425,000,000 gallons. We do not think that the premium will do much good, or that amount of good which it might have done if he had increased the number of inspectors and organised it on a national basis. I am sure that they would insist on isolation here and there. We think that the Minister should have more power, and that he should exercise it, instead of leaving it to county councils who steadily refuse to carry out the dicta of the right hon. Gentleman. In his pure milk policy the right hon. Gentleman has fallen short of the case. We are anxious to secure a milk supply for more people, an increased consumption of fresh liquid milk, and this is a most important Amendment towards securing that.

The Committee divided: Ayes, 33; Noes, 171.

Brigadier-General Clifton Brown: I beg to move, in page 12, line 27, to leave out "(including conditions as to the payment of fees)."

I thank the Parliamentary Secretary to the Ministry of Health for being in his place because it is largely for the purpose of bringing this question of fees to the notice of the Ministry of Health that I move the Amendment. One of the chief grievances of those engaged in the production of the better classes of milk is that they are called upon to pay big fees in connection with milk licences, whereas those who produce the ordinary milk pay no fees at all. The Minister of Agriculture has remarked on the importance in connection with these schemes of the help and co-operation of those who are being catered for by them and in that connection I think consideration should be given to the anomaly that the Ministry of Health regulations impose these fees on the people who are producing the real good article which everybody wants, while those who are not producing that higher grade of articles are not required to pay any licence fees. It is in order to raise this point and in the hope that the iniquitous procedure to which I have referred will not be perpetuated in any new regulations which the Minister of Health may make under this Clause, that I move the Amendment. I would add that under the new suggestions in the report of the Diseases of Animals Committee, which no doubt will be followed more or less in these regulations, a sum of £750,000 is being provided and many additional veterinary surgeons and inspectors will be available and therefore it should be less necessary in the future than it has been in the past to collect big fees from the people who provide the better milk. All dairies will be inspected and will have to keep up to the standard for which they are licensed. I should like an assurance that the encouragement of clean milk will not be hampered, as it is at present, by these licences which the Minister of Health may put on, after consultation with the Minister of Agriculture. It is not the way to encurage the small farmer to produce clean milk, and it has stopped thousands of small farmers from doing so. I hope that, attention having been drawn to the matter by this Amendment, the Minister will give an assurance that the point will be considered in connection with any regulations which he may make.

Mr. Elliot: I am indebted to my hon. and gallant Friend for raising this question. I think it is true that these fees are felt to be some hardship by certain producers. The reason for requiring payment of fees is obvious. It is that the licensing authorities are involved in special expenses for the inspection of farms and other establishments for purposes of bacteriological examination, which are not incurred in the case of unlicensed milk. The licensees do get some financial advantage from being able to sell milk under the statutory licence, and it is considered only reasonable that they should bear some part of the special cost of the licensing scheme. At present the fees prescribed range from 5s. a year for a retail shop to £5 a year for a farm producing certified milk. I should be prepared to discuss the question of fees with the representatives of the local authorities, the milk producers, and the distributors, when the revised Order is prepared and my right hon. Friend the Minister of Health concurs in that pledge. The Parliamentary Secretary to the Ministry of Health is here and is ready to speak, if necessary, on the point, but I hope that, having received the assurance that we are willing to discuss this question round the table with the local authorities, the producers and the distributors when preparing the revised Order, my hon. and gallant Friend will feel that he has gained the point which he wished to make by this Amendment.

Brigadier-General Brown: As I said, I am glad that the Ministry of Health is represented here, and I take the opportunity of saying that I hope the Departments will not overlap as they are doing. The milk authorities in the country at present very often overlap in their different inspections of the farms. In view of what has been said, I beg to ask leave to withdraw the Amendment.

The Amendment, by leave, was withdrawn.

NATIONAL POULTRY COUNCIL

Among the reports considered at the Annual Poultry Parliament of the National Poultry Council, recently held at Eastbourne, was one from the Ministry of Agriculture dealing with the progress of work under the National Poultry Institute scheme during 1933-34. The features of this report include a statement of work carried out at the Ministry's veterinary laboratory in the investigation of tuberculosis, and Newcastle disease an outbreak of which occurred in Hertfordshire last year, though the origin has not been discovered. A statement of further progress in breeding research at Cambridge was submitted by Professor R. C. Punnett.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

June 25th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

June 27th.—Annual Summer Meeting of the Lancashire Division, N.V.M.A., at Southport.

June 28th.—Meeting of the Dumfries and Galloway Division, N.V.M.A., at Appleby.

July 2nd.—Membership Examination Fees due.

July 2nd.—N.V.M.A. Committee Meetings.

July 3rd.—N.V.M.A. Committee and **Council** Meetings.

July 4th.—R.C.V.S. Committee Meetings.

July 5th.—R.C.V.S. Committee Meetings.

July 6th.—R.C.V.S. Committee and **Council** Meetings.

July 9th.—Membership Written Examination.

July 11th.—Membership Oral Examinations begin.

July 20th.—Summer Meeting of the Mid-West and South Wales Division, N.V.M.A., at Cheddar.

July 30th-Aug. 3rd, 1934.—National Veterinary Medical Association Congress, Edinburgh.

Aug. 13th-18th, 1934.—Twelfth International Veterinary Congress, New York.

Aug. 24th.—Entries due for Jubilee Memorial Bursary Examination.

Sept. 24th-25th.—Examination for award of Jubilee Memorial Bursary.

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R.C.V.S.—DIPLOMA IN VETERINARY STATE MEDICINE

On the results of the examination held in Edinburgh on June 7th-12th, the following candidates have been awarded the Diploma in Veterinary State Medicine: Addison, F. H., Fraser, J. M., Macaulay, J. W., Simpson, Wm.

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CORRIGENDA

"Caries of the Teeth of Animals."—*V.R.*, June 16th, 1934, pp. 681-682; in para. 3, line 4 *denture* should read *dentine;* in para. 4, line 19 "Le Darmons" should read "*Le Darmous.*"

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PERSONAL

Appointments.—Mr. J. W. Burgess, M.R.C.V.S., who has now been for the past four years in practice as a veterinary surgeon at Buchlyvie, has been appointed assistant to the Professor of Surgery and Obstetrics in the Royal (Dick) Veterinary College, Edinburgh.

Stirling County Council have appointed Mr. J. D. M'Lauchlan, M.R.C.V.S., D.V.S.M., of Brechin, an assistant in the veterinary department of the Council, Mr. M'Lauchlan was previously in general practice in Ross-shire and Angus.

ARMY VETERINARY SERVICE

Movements of Officers

Major D'A. S. Beck, who is at present on leave in this country ex. India, is being reverted to the Home establishment, on compassionate grounds, with effect from June 29th, and joins the Eastern Command for duty on that date.

Lieut. F. L. Cundell sails for India on June 29th, for a full tour of duty abroad.

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R.A.V.C. Annual Dinner, 1934

Major-General J. J. B. Tapley, D.S.O., Director-General, Army Veterinary Services, presided at the above Dinner on Friday, June 15th, 1934, at the Hotel Victoria, when Lieut.-General Sir Felix F. Ready, K.C.B., C.S.I., C.M.G., D.S.O., Quartermaster General to the Forces, was the guest of the evening.

There were also present, Major-Generals W. S. Anthony, C.B., C.M.G., Sir Layton J. Blenkinsop, K.C.B., D.S.O., and Sir John Moore, K.C.M.G., C.B., F.R.C.V.S., Brigadier A. J. Williams, D.S.O.

Colonels J. J. Aitken, C.M.G., D.S.O., O.B.E., P. W. Dayer-Smith, O.B.E., H. E. Gibbs, D.S.O., H. J. Holness, D.S.O., W. E. Schofield, O.B.E., A. Smith, F.R.C.V.S., A. G. Todd, C.B.E., D.S.O., G. K. Walker, C.I.E., O.B.E., F.R.C.V.S., W. H. Walker, D.S.O., O.B.E., **F. W. Wilson, C.B., C.M.G., F.R.C.V.S.**

Lieut.-Colonels E. P. Argyle, D.S.O., E. B. Bartlett, O.B.E., B. R. Body, A. F. Castle, F.R.C.V.S., A. E. Clarke, G. Conder, D.S.O., O. S. Fisher, O.B.E., H. Greenfield, O.B.E., J. R. Hodgkins, D.S.O., F.R.C.V.S., F. D. Hunt, O.B.E., G. B. C. Rees-Mogg, O.B.E., W. N. Rowston, F. C. Stratton, L. M. Verney, D.S.O., F.R.C.V.S.

Majors G. Barnett, M.C., D'A. S. Beck, R. E. Bond, A. B. Bowhay, O.B.E., E. C. Bowes, C. Davenport, O.B.E., F.R.C.V.S., G. V. Golding, J. Harrison, T. Hicks, C. Holland, M.C., W. B. Howe, C. J. R. Lawrence, O.B.E., T. Lishman, G. Lloyd, D.S.O., F.R.C.V.S., J. J. Mills, M. A. Murphy, G. E. Oxspring, J. J. Plunkett, O.B.E., C. G. Saunders, D.S.O., K. S. Simpson, W. L. Sinton, S. L. Slocock, M.C., F.R.C.V.S., J. Southall, R. T. Smith, P. S. Sparling, R. H. Stalker, W. H. Thomas, C. H. S. Townsend, O.B.E., M.C., F.R.C.V.S., E. G. Turner, D.S.O., E. Wallace, P. F. Woodland, T. E. Campey, M.B.E.,

Captains E. Brayley-Reynolds, O.B.E., F. W. Goodall, H. A. Idenden, H. Jerrom, G. S. Walker, A. J. Warburton.

Lieutenants R. F. T. Bowden, I. H. Chalmers, F. L. Cundell, I. McLaren, L. R. Morford, J. M. Ross, A. D. Seton, G. V. Short, D. F. G. Smith, W. E. Turton.

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R.C.V.S. OBITUARY

Castledine, Joseph, Partridge Green, West Grinstead, Sussex. "Existing Practitioner." Died June 16th, 1934; aged 90 years.

Webb, Edward Clive. Colonel A.V.S. Graduated London, March 8th, 1902; Fellow December 3rd, 1910. Died in Winnipeg May 30th, 1934.

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THE WORK OF THE ANIMAL DISEASES RESEARCH ASSOCIATION

In a recent issue *The Scottish Farmer* paid gratifying tribute, in the following terms, to the work and achievements of the Animal Diseases Research Association at Moredun Institute, Midlothian, which claims the services of several well-known veterinarians.

"The A.D.R.A. is probably the most modest and least vocal of our research bodies. It appears

to concentrate more on work and less on publicity and propaganda; yet its triumphs and benefits to agriculture are second to none. The successes gained in the investigations in respect of braxy, louping-ill, lamb dysentery and milk fever constitute a splendid record, and the agricultural industry is already under a deep obligation for the magnificent works already accomplished. These certainly encourage the hope that other elusive diseases such as scrapie in sheep, grass disease in horses, abortion in cattle, etc., will soon be placed on the list of conquests by the Animal Diseases Research Association."

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WHIPSNADE TRAGEDY: MAN MAULED BY LIONS

The Zoological Society's Gardens at Whipsnade, Beds, were the scene of a distressing tragedy on June 7th, when a man, in attempting to retrieve a hat from the lions' den, overbalanced and fell in, and was mauled to death by the lions.

Captain W. P. B. Beal, M.R.C.V.S., superintendent of the Zoo, and the keepers made every effort to entice the lions from the body, tempting them with meat, and eventually shots were fired to frighten them off. They succeeded ultimately in getting the lions into their sleeping dens and the doors were closed on them.

The inquest was held on June 13th, when, after dramatic evidence had been given by Mr. Horace A. Myhill, a clerk who threw into the dell the hat which Stenson went after, Captain W. P. B. Beal, superintendent at Whipsnade, and others, the jury returned a verdict of "Death by Misadventure," and recommended that alterations should be made to prevent the possibility of any accident.

In his summing up the Coroner expressed deep appreciation of the courage and presence of mind of Captain Beal, who risked his life in endeavouring to recover Stenson, although, when he arrived on the scene, he realised that the man was dead.

The jury, too, commended the prompt action of Captain Beal and his staff.

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RESEARCH DEFENCE SOCIETY LECTURE

Scientist and Lethal Chamber Test

Professor J. Barcroft, Professor of Physiology at Cambridge University, who risked his life by going into a lethal chamber with a dog that died as a result of the experiment to test the comparative effects of prussic acid gas on man and dog, delivered a lecture before the Research Defence Society at its annual meeting at the London School of Hygiene and Tropical Medicine, on June 5th, on "Experiments on Man."

Professor Barcroft's answer to the question, "Can the results of experiments performed on animals be regarded as applicable to man?" was that the results could as a rule be transferred to man, though not without reservations, which varied with the nature of the experiments.

Discussing the question of the strength at which prussic acid vapour in the air would prove fatal to various mammals, he referred to his own experiment in these terms:—

"If we . . . wish to know how long a man can survive a concentration of 0.6 milligrams of hydrocyanic acid gas per litre, the answer is that he would be exceedingly unlikely to die if exposed for less than one minute, and extremely unlikely to live if exposed for much more than 15 minutes. This answer we know to be correct so far as the inferior limit is concerned, for the matter was on one occasion put to the test by an experiment on man. The subject was in the gas for upwards of two minutes, at the end of which time he was still in possession of his faculties."

He revealed later in the lecture that "there was a dog in the lethal chamber with the man, and at the end of the experiment the dog was moribund."

Among animals the dog formed the more interesting study in the type of experiment referred to because, he pointed out, it was more akin to man in size and quite of the same order as the monkey or the goat. "The reason why the dog yields so quickly to an atmosphere of prussic acid is probably due to the power of his respiration—he takes a much larger quantity of the fatal gas; in short, he takes a bigger dose."

As to the practical importance of these problems in everyday working life, Professor Barcroft said: "Prussic acid itself has come into use on a large scale for the decontamination of ships, and questions are constantly arising whether exposure to the gas can have been the cause of subsequent disability. Not only so, but in the ever-increasing complication of industrial processes, new dangers arise from the exposure of employees to unsuspected gases in the atmosphere."

In his conclusions, Professor Barcroft declared that purely objective experiments did not as a rule demand the use of man; in a great many cases the relevant information could be obtained from animals. "The proof that plague could be communicated to men, was according to the textbook statement first supplied by Whyte, who injected himself with blood taken from a plague patient," he added. "I leave it to the judgment and conscience of my hearers to decide whether, if to-day the matter could be settled with a high degree of certainty on rats, marmots, monkeys, and the like, such an act, in any case one of heroism, would not verge on unjustifiable suicide?"

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MILK SUPPLY AND TUBERCULOSIS

Addressing the twentieth annual conference of the National Association for the Prevention of Tuberculosis, Lord Astor, after referring to the factors which had brought about the reduction in the incidence of tuberculosis, said that recently there had been a discussion about the milk supply. Although over 40 per cent. of cows were infected the proportion yielding tuberculous milk was probably only about 2 per cent. The diminution in the deaths from non-pulmonary tuberculosis was remarkable, and much of that decline must be attributed to improved milk supply.

The testing of cows to-day was by no means satisfactory. First of all there were too many brands of tuberculin of different potencies on the market. Anyone might manufacture tuberculin and offer it for sale though it might be unsatisfactory. Naturally those tuberculins gave varying, sometimes almost weird, results. Yet all were recognized officially. Secondly, there were still veterinary surgeons who lacked the experience necessary to interpret the results correctly. It seemed to him that the standardisation of tuberculin was an urgent necessity. If, however, that offered insuperable difficulties, then the Government should restrict the use of tuberculin

for licensed herds to one brand of known potency and the lowest strength of that tuberculin should always be high enough to cause a definite reaction. If, as he gathered, the Government contemplated developing our veterinary service through local authorities as had been done with the medical service we should be helped still further in the reliability of tests.

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NATIONAL HORSE ASSOCIATION

The newly elected President—Mr. Nigel C. Colman, M.P.—presided at a Council Meeting of the National Horse Association held on June 12th, when 15 candidates were elected to membership.

Riding.—The Council noted with pleasure that horse riding was definitely on the increase and approved the issue of a Supplement to the Horse Owners' Guide, containing an article on "The right and privileges of horse riders with regard to highways, bridle tracks, grass margins, etc., and a summary of the conditions of the most popular events at gymkhanas, and also details of various equestrian sports. This publication would be available very shortly. It was reported that many Riding Clubs for adult riders were now in active operation, and a Badge for riders belonging to such Clubs was passed for issue. It was felt that this Badge would enable the members of one Club to recognise other Club riders when competing at gymkhanas and in inter-club competitions.

It was reported that many riders had enquired for details of hotels—especially at the seaside—where good stabling accommodation could be obtained, or where riding facilities were available. The Secretary was instructed to obtain as much information as possible. A list of 700 riding schools throughout the country had been indexed, and all riding schools were invited to become members, and to have full details of their establishment sent in to the Association for reference during the summer season. Riding facilities in Scotland were specially desired.

Several riding schools had enquired as to the legal position if a rider on a hired horse met with a serious accident, or if such a rider knocked down a pedestrian, and the Council desired to draw the attention of owners of riding schools to the risk they run on non-insurance against third party.

Horse Owners' Reference Book.—The Secretary reported that the issue of this 1s. publication had proved very popular indeed, and that the entire edition would soon be exhausted.

Parliamentary Bills.—It was reported that the Parliamentary Committee had been very active in respect of several bills before Parliament which seriously concerned the owner and user of horses, and that a number of amendments and suggestions submitted had been adopted. The Chairman stated that in the majority of cases the views of the Association had met with sympathetic consideration, and that undoubtedly the firm and united action which could now be adopted, owing to so many of the Societies interested in the horse now being associated with the activities of the N.H.A., was proving very beneficial to the interest of the horse owner.

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SMALL COUNTRIES AND MILK CONSUMPTION

"A feature of the World's Dairy Congress was the large proportion of papers which emanated from the newer small nations of the world," says The Special Correspondent of *The Scottish Farmer.* "The slump in the market for dairy products is to some extent due to the marvellous development of agriculture that has taken place in the new small post-war countries formulated by the Versailles Treaty. On the other hand, these small countries, with commendable foresight, are taking effective steps to build up a healthy, vigorous population by an increased consumption of milk through milk propaganda in the schools. Like the old Greek philosophers, they believe that the foundation of an effective education can only be laid by having a sound mind in a healthy body. Not only have they introduced a daily ration of milk into the schools, where children acquire a lifelong liking for milk, but the Government supports a vigorous milk propaganda.

Dr. J. Kovacs gave an account of experiments carried out by the Hungarian Government. Doctors who visited the schools regularly when the experiments were in progress reported that, according to the teachers' testimony, pupils receiving milk made greater progress in their work than others, being more attentive and less restless.

The arrangement adopted is that the dairy companies supply to the schools 20 to 25 per cent. more milk than they are presumably paid for; so that those able to pay and those not able to pay get their supply of milk without distinction. The speaker indicated that the Government made a contribution to the cost of milk, so that every necessitous child was ensured of a pint of milk daily.

On the grounds that a supply of milk to children is an educational necessity, it was agreed, on Dr. Kovacs' suggestion, that the congress request the International Federation of the Dairy Industry to induce the Government of each country to organise and generalise the distribution of milk in schools.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

R.C.V.S. Council Election

To the Editor of The Veterinary Record

Sir,—Please permit me to thank those members of the profession who were good enough to support my canditure at the recent Election to the Council.

Yours faithfully,
G. K. Walker.

Abingdon,
Berks.
June 14th, 1934.

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To the Editor of The Veterinary Record

Sir,—Will you allow me, through your columns, to thank those members who were kind enough to assist my election to Council of the R.C.V.S. I am most grateful.

Yours faithfully,
F. J. Taylor.

Oxford,
June 14th, 1934.

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To the Editor of The Veterinary Record

Sir,—I shall be much obliged if you will, through the medium of *The Veterinary Record*, allow me to thank all those members of the profession who supported me in the recent Election and to assure them that I will do my best.

Yours faithfully,
W. S. Mulvey.

117, Baddow Road,
Chelmsford.
June 14th, 1934.